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LECTURES
ON THE
THEORY AND PRACTICE OF MEDICINE;
NOW IN COURSE OF DELIVERY AT THE THEATRE OF ANATOMY AND MEDICINE, WEBB-STREET, SOUTHWARK.

BY

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&c., &c.

Diseases of the ovaries; encephalosis; encysted tumours; ascites. Diseases of the mamma; inflammations; tuberculous swelling; irritable mamma; chronic mammary tumour; cysts; hydatids; encephalosis; scirrhus; carcinoma. General reflections on puerperal diseases.

DISEASES OF THE OVARIUM.

I.—INFLAMMATION.

GENTLEMEN:—In my last lecture I noticed inflammation of the uterine appendages. That of the ovarium is denoted solely by local pain and tenderness, the general system and the functions of other organs being scarcely influenced by this affection.

II.—ENCEPHALOSIS, ETC.

As inflammation of the ovarium is merely characterised by local pain and tenderness, the present and other morbid growths are denoted by local tumour, detected by a careful examination, and the effects of compression on adjacent organs.

III.—ENCYSTED TUMOUR, ETC.

This case includes—

1. Cysts;
2. Numerous Cysts;
3. Hydatids.

It is distinguished by tumour, originating in the situation of the ovarium, on one side of the abdomen, gradually enlarging, and leading to a tumour with fluctuation, of considerable, and even enormous, magnitude.

This affection is distinguished from—

ASCITES

by the following signs:—1, it is generally more tense, and, when of moderate magnitude, more protuberant, more defined; 2, the sound is dull on percussion at the prominent part of the abdomen, whereas in ascites it is sonorous at this part, from the floating of the intestines, whilst it is dull nearer the spine; 3, it is less changed by posture, whilst in ascites the effusion falls to the lowest part of the abdomen in the erect, and to the anterior or posterior parts, in the prone or recumbent, positions.

Ovarial cysts generally arise without any assignable cause; but ascites usually depends upon some preceding organic affection, the diagnosis of which is, in itself, important: the principal of these are—

1. Peritonitis;
2. Disease of the Heart;
3. Disease of the Liver;
4. Disease of the Kidney, &c.
5. The Loss of Blood;
6. Inveterate Chlorosis;
7. The Cachexiæ, &c. &c.

DISEASES OF THE MAMMA.

I.—INFLAMMATION.

1. *The Acute.*

1. *The History.*—Inflammation of the mamma may occur from a blow, or similar external causes; but its most frequent source is that change which is wrought for the secretion of milk, after parturition, left unrelieved by the too tardy application of the infant to the breast.

II. *The Symptoms* consist in swelling, tenderness, and pain, sometimes preceded by rigor and attended by fever. These symptoms may subside, or become attended by throbbing and augmented hardness, and tenderness, and eventually by glossy redness, and fluctuation, denoting the occurrence of suppuration. The most tender part at length ulcerates, unless the pus be allowed to escape through an artificial opening.

III. *The Varieties.*—Sometimes there are several successive abscesses, with much suffering, fever, and perspiration. Sometimes an abscess is formed very deeply, burrows, and forms several sinuses, requiring successive punctures by the lancet. In other, rarer cases, pus forms in contact with the ribs, leading to exfoliations of bone.

IV. *The Treatment* consists in the prompt administration of an emetic, a purge, and of local bloodletting; and in freely relieving the mamma by suction.

2. *Lacteal Abscess.*

This affection is not preceded by the symptoms of acute abscess; but a sense of tension is experienced, and a fluctuating tumour is felt extending from the nipple towards the circumference of the mamma. The tumour is confined to this part. Its tension is augmented by the rush of milk when the infant is put to the breast. The cutaneous veins are large. If a puncture be made, several ounces of milk are discharged; and if this opening be small, the cavity is speedily filled again. Sometimes the skin ulcerates, and an opening is made, through which the milk flows during each act of suckling. This affection resembles ranula in its nature.

3. *Chronic Abscess.*

Sometimes pus is formed slowly without previous redness, tenderness, pain, heat, rigor, or fever. In such a case, the operation for removing the mamma has been begun, and the pus has been accidentally evacuated by the scalpel. A careful examination may, in doubtful cases, detect fluctuation, and a puncture would make the nature of the case obvious.

II.—TUBERCULOUS SWELLING.

This disease is slow in its progress, unattended by pain, distinctly circumscribed, generally, though not always, solitary; it is usually accompanied by enlarged cervical glands.

III.—THE IRRITABLE MAMMA.

1. *Without Tumour.*

In this case the mamma, or one or more of its lobules, becomes exquisitely tender and painful. The pain is often extended to the shoulder, axilla, inner side of the elbow, and the fingers, and sometimes along the side of the hip. The slightest examination augments the pain, which is sometimes such as to render the weight of the breast, or the position of the side affected, equally insupportable.

This affection is augmented on the approach, and diminished on the recession, of the catamenia, which are generally irregular, deficient, or profuse.

There is sometimes an alternate sensation of heat and cold, or darting like that of the tic douloureux. Sometimes both mammæ are affected.

2. *With Tumour.*

In some instances the pain and tenderness are situated in a small, moveable tumour, varying from the size of a pea to that of a marble.

This affection is solid and semi-transparent, interwoven with fibres.

3. *With Ecchymosis.*

With exquisite tenderness of the mamma, and pain down the inner side of the arm, there is, in this case, a degree of ecchymosis before and at each catamenial period. It exists in one large spot, whilst smaller and less vivid spots appear in other parts of the mamma. It declines at various periods after the cessation of the catamenia. It occurs in the young, and frequently in those in whom the mamma is large, and the constitution irritable.

The Treatment consists in allaying the irritability of the system and of the organ affected, by mild aperients, tonics, opiates, diet, exercises, &c.

IV.—CHRONIC MAMMARY TUMOUR.

I. *The History.*—This affection, like that last mentioned, has a strict connection with the catamenia, being probably induced, and certainly aggravated, by sympathy with the uterine organs at the catamenial periods. It occurs principally in the young single, or childless.

II. *The Symptoms.*—This tumour grows upon the surface of the mamma, either the anterior or posterior; it is moveable over that surface, and lobulated to the touch; it begins, and often continues long without pain; but it is sometimes painful, the pains extending to the shoulder, resembling the aching of rheumatism; it is generally, but not always, free from tenderness to the touch. Its growth is slow; its weight usually from one to four ounces; but it is sometimes larger.

III. *The Morbid Anatomy.*—The structure of this tumour is lobular, and it is enveloped in a membrane, both similar in appearance to those of the mamma itself.

V.—CYSTS, HYDATIDS, ETC.

These affections are distinguished by tumours, without pain or tenderness, but with tension, and eventually, with fluctuation. Their accession and progress are slow. There are no constitutional symptoms. The disease gives no real uneasiness, until, becoming large, it is inconvenient from its bulk and weight. The external veins enlarge. The tumour is moveable upon the ribs and under the integuments.

Cysts and hydatids sometimes induce inflammation and ulceration. The system then suffers.

The most certain criterion of the encysted or hydatid tumours, is a puncture. The escape of a limpid fluid satisfies the doubts of the surgeon and allays the fears of the patient. Both diseases are local, and free from malignancy.

Cysts generally occur in clusters. Hydatids are distinguished by containing others produced by their internal surface.

The preceding diseases are all free from malignancy in their character and tendency. Those which are next to be noticed are frightfully malignant and destructive, and arise from, or lead to, constitutional contaminations.

VI.—ENCEPHALOSIS.

I. *The History.*—This disease occurs earlier in life than the terrific disease next to be noticed.

II. *The Symptoms.*—It is distinguished from it, by its rapid growth, its irregular form, its soft, doughy feel, its tendency to ulceration, the formation of fungus. At first, it is even and smooth on its surface, free from pain or tenderness, or discolouration, but soft and fluctuating. It soon acquires a fearful size and aspect; the surface is then uneven and discoloured, the feel quaggy. The system suffers; the patient has pallid prolabia, and is feeble and restless.

The adjacent lymphatic glands, or some more distant part, internal or external, may be simultaneously affected.

VII.—SCIRRHUS.—CARCINOMA.

I. *The History.*—Scirrhus frequently occurs about the period of the cessation of the catamenia. It may be apparently spontaneous; or it may arise from a blow, or from the change in form and character of some other mammary disease.

II. *The Symptoms.*—This disease is circumscribed at first, little augmented in size, of singular hardness, somewhat tender, and accompanied by a peculiar lancinating pain. In its progress

1. The nipple frequently becomes fixed and drawn inwards;

2. The skin becomes adherent and tuberculated;

3. The adjacent lymphatic vessels and glands become enlarged and hard.

4. Eventually, the skin ulcerates, and presents the appearance of frightful chasms, and perhaps fungous growths, and there is extreme suffering, and extreme acrimony and fœtor of the discharges.

5. The whole system is worn, and hectic; the complexion is 'jaune paille,' and there is great emaciation.

III. *The Treatment* consists in excision, or opiates.

Having now, Gentlemen, gone over the diseases of the various organs of the human frame, and lastly those of the uterine system, I am naturally led to treat of

PUERPERAL DISEASES,

and, having devoted much attention to this subject formerly, I shall do so very particularly. There is no class of diseases which will fill your minds with greater anxiety when you have entered into practice.

Many circumstances concur to render the disorders of the female sex peculiar; but this is still more emphatically true of puerperal diseases. This fact will appear sufficiently obvious upon a simple enumeration of the principal causes of these diseases; and still more so, when it is considered that, in general, two or more of these causes co-operate together to produce the cases which present themselves to our notice in actual practice.

In both these points of view, indeed, the subject of puerperal diseases appears to me to present a peculiar object of study to the physician. In scarcely any other cases do so many and such various circumstances require to be taken into the consideration at once, as in puerperal diseases.

This class of diseases may be considered as embracing all those morbid affections which arise out of the state of pregnancy, of child-bearing, or of lactation. They may be divided into those which occur in the earlier, and in the later, periods of pregnancy,—immediately before, and after, and during the act of parturition,—during what is termed the puerperal state,—and during the period of lactation.

In the early period of pregnancy many organs suffer, in consequence of the source of irritation then set up in the uterine system. These affections are, for the most part, well known, and do not come within the design of this course, the object of which is to treat only of certain morbid affections, which occur in the puerperal state, and which appear to me not hitherto to have received the degree of consideration which is due to them.

In the later periods of pregnancy several causes combine their influence, especially to endanger the state of the brain. It is upon the conjoined and separate operation of these causes that our attention should be particularly fixed, in regard to the diseases of this period; for it is frequently by their co-operation alone that their morbid influence upon the brain is brought into activity, whilst it may occur, afterwards, that one or even several of these causes may be removed, and yet a remaining one may renew or continue the morbid effect upon the brain, which they had conjointly begun. The causes which co-operate in the last period of utero-gestation, in inducing a morbid state of the brain, are chiefly uterine and intestinal irritation, concurring with the actual pressure of the gravid uterus upon the various viscera and vessels situated behind it, and the state of plethora of the vascular system, especially, occasioned by this pressure.

During parturition the contractile efforts of the uterus and of the abdominal muscles, add another source of danger to those already mentioned; and it is at this period that the brain is most subjected to fulness and pressure, and that convulsions or apoplexy are apt to occur.

Several sources of danger are removed when delivery has taken place; and yet this is not always sufficient to protect the patient from an attack of convulsion; for this terrible affection has first occurred even after delivery had been effected. In this case, especially, I suspect that a state of intesti-

nal load and irritation has been the exciting cause of the attack of convulsion. And this observation confirms the remark already made, that when several causes have co-operated to induce a state of danger, some may be removed, and yet, if one remain, it may lead to the most disastrous events. This peculiarity in the study of puerperal diseases, cannot be pointed out too often, or too strongly.

Convulsions do occasionally occur after delivery, even although the system be in a state of exhaustion from hæmorrhage. The state of general exhaustion is not, I believe, incompatible with a state of fulness of the brain; but this kind of convulsions will be found, I think, frequently to involve also a state of intestinal load and irritation.

But immediately after delivery, the danger may arise more directly and simply, from a state of inanition and exhaustion, the effects of an emptied condition of the uterus and abdomen, of abstracted pressure upon the viscera and vessels along the spine, and perhaps of loss of blood.

To these sources of danger, after delivery, must also be added, the effects, perhaps, of protracted suffering, of violent pain, of mental alarm, and of what may be termed the "shock" of parturition.

There is another series of puerperal affections which do not occur, for the most part, until some hours at least after delivery. These affections consist principally in uterine or peritoneal inflammation, in the effects of loss of blood, or in two or more of these combined. There are two other sources of irritation, in the condition of the mammæ, and occasionally of the uterus; and there is that terrible disease, the epidemic puerperal fever.

Considering the important and sudden change which takes place in the condition of the uterus, in parturition, we cannot be surprised that this organ should frequently be the subject of inflammation in the puerperal state. Neither can it be matter of surprise that its appendages, the adjacent viscera, and the peritoneum at large, should not unfrequently participate in this morbid condition. And when we further consider the degree of violence to which the brain has been subjected, during parturition, we must be led to expect that this important organ should be left by that process in a state of proneness to inflammation; and this is precisely the case; for, next to the viscera of the abdominal cavity, the brain is, perhaps, the organ which is most apt to become affected by puerperal inflammation.

There is another not less fertile source of puerperal disease, in the state of the alimentary canal after delivery. This state consists, in general in a loaded or disordered condition of the large intestines; but sometimes, also, in improper things taken into the stomach. It is most important to observe, that the effects of stomachal or intestinal irritation, are very similar to those of inflammation, as it affects the head or abdomen; for on the just diagnosis of these cases depends the proper application of the remedies.

Similar observations apply to the effects of loss of blood, when these are of the remote character, and attended by the phenomena of reaction. In this case, the head is apt to be so affected as to lead to the idea of inflammation of the brain; and the heart, so as to present the symptoms of disease of this vital organ.

But it is rare that these sources of disease act thus distinctly; it is far more usual to observe them co-operating together to produce a mixed case, and it is in such complicated cases that all the attention and energies of the mind are required to appreciate the influence of each, and to adapt the remedies to this complicated form of disease.

There is, not unfrequently, also, a source of irritation in the state of the uterus itself. A certain degree of after-pain is usual in almost every case; but a state of irritation and pain are frequently kept up by the presence of clots of blood, and the efforts for their expulsion. This state of the uterus is full of dangers; not in itself, but by masking and concealing the beginning of dangerous diseases; pain of an inflammatory kind is too apt to be neglected, under the impression that it is but the usual after-pain.

A similar remark may be made in regard to the irritation excited in the establishment of the secretion of the milk. This process is apt to be attended by pain, fever, and affection of the head, which frequently mask the beginnings of puerperal disease.

Both these sources of irritation concur to add complexity to the character, and difficulty to the diagnosis of puerperal diseases, and to constitute that peculiarity of this study to which I have already alluded.

The first of these classes of disease might perhaps be denominated parturient, whilst the second might be distinguished by the epithet puerperal; the former occurring chiefly in or near the act of parturition; the latter, usually, some hours afterwards, There is a third class of morbid affections. which follow still more remotely upon child-bearing, and which consist, principally in the more continued effects of intestinal disorder, or of loss of blood, and issue, for the most part, in an inability to support the drain occasioned by lactation.

A fourth series of puerperal maladies, using this term in its most extended sense, arises out of undue lactation itself. They consist in the various forms and effects of exhaustion, and constitute a most important and interesting subject for renewed inquiry; for I believe them not to be at present by any means fully understood.

There is still another consideration which

is full of interest, in regard to puerperal diseases,—namely, the state of health of the patient previously to her confinement. That which most frequently modifies the puerperal state, is disorder of the general health, of the various characters described in the first part of this course. It frequently occurs, from such a state of general disorder, that the recovery, after confinement, is tardy, the secretion of milk scanty, or even morbid, affecting the health of the infant, and that there are many local affections, especially of the head or of the heart, which are full of pain and suffering.

I have now taken a rapid survey of the principal causes of puerperal diseases. It may be truly said, that many of these causes co-operate in every case; but it is also true, that each puerperal disease is to be referred to one or two of these causes more especially. Every case of puerperal affection may, therefore, be considered as a case of modified disease, requiring that the mind of the physician be active and comprehensive, so as to embrace the numerous circumstances of the disease. This is true in a degree which scarcely obtains in any other class of diseases; and it is on this account that I have represented the study of puerperal diseases as requiring peculiar habits of inquiry and investigation.

I have adopted the term parturient, to express the condition of a person just before, just after, and during the act of parturition. It is my intention in this lecture, briefly to notice the morbid tendencies of this state, as a necessary introduction to the more detailed account of some of the affections which occur in that, which may perhaps be more properly termed puerperal. The distinction between the parturient and the puerperal states will be found to be at least of great practical utility.

I have cursorily alluded, in the preceding remarks, to the principal causes of apoplexy and convulsions, as they occur in the last stage of utero-gestation, and in the act of parturition. It is my present object to enter into this important question with somewhat more detail.

The first cause which I enumerated as conducing to these affections of the brain, was uterine irritation. That this species of irritation does, indeed, dispose to disease of the brain, is sufficiently obvious from the occasional occurrence of convulsions in cases even of dysmenorrhœa or painful menstruation.

A second exciting cause of affection of the brain, probably not very different in its nature from the former, is the parturient efforts of the uterus when labour has begun. The effects of labour-pain upon the vascular system of the head are sufficiently seen in the flushed state of the countenance. And the attack, or the recurrence of convulsion, not unfrequently takes place with each uterine effort.

With the uterine efforts must, however, be conjoined those of the abdominal and other muscles, in our estimation of the influence of labour-pains upon the state of the brain.

The third cause of affection of the head in the parturient state, is stomachal or intestinal load or irritation. It appears almost unnecessary to adduce any example of the influence of these causes upon the vascular system and nervous origins within the head. The presence of indigestible substances in the stomach, and of indurated or otherwise morbid fæcal matters in the large intestines, are amongst the most usual causes of apoplexy and convulsions in those who are predisposed to these affections and especially in the puerperal state. The late Dr. John Clarke published an interesting and important paper, to which I shall have occasion to revert hereafter, upon the morbid influence of oysters, taken at this period, upon the brain; and it cannot be doubted that other indigestible substances have frequently, perhaps unsuspectedly, produced the same deleterious effects. One of these effects was convulsion. And it is to be particularly remarked, that the cases published by Dr. Clarke all occurred after delivery, and of course even after some of the predisposing causes of puerperal convulsion had ceased to operate.

But a still more frequent concurrent cause of convulsion, or of apoplexy, in the parturient state, is a loaded condition of the large intestines. The operation of this cause is frequently made obvious by the effects of purgative medicines and enemata, in these cases, both in the relief they effect in the symptoms of affection of the brain, and in the character of the alvine evacuations; the quantity of scybalous fæces which have thus been evacuated, in some instances, would appear incredible, were not the torpid and dilated condition of the intestine taken into the account.

Nor can there be any doubt, that the gravid uterus itself acts, by its size, and by its pressure upon the descending aorta, in inducing fulness of the vessels of the brain, in the last period of utero-gestation. It is on this principle, that delivery frequently secures the patient against the recurrence of the fit of convulsion. When the pressure of the gravid uterus falls more particularly upon the vena cava, the effect of interrupted circulation is, of course, observed in the lower extremities, chiefly under the form of œdema, but perhaps of phlegmasia dolens.

It usually happens, as I have observed already, that apoplexy or convulsion occurs in the parturient state, from the conjoined operation of several of these causes. And it is only by an attentive consideration of all

of these sources of danger, that the attack is to be prevented in the first place, and its recurrence in the second.

It is important also, with the view of prevention, to consider the probable condition of the encephalon itself immediately leading to an attack of convulsion or apoplexy. It is doubtless one either of irritation, or of fulness. Every cause of these morbid states of the brain, must, therefore, be carefully removed and avoided, whilst their effects are combated by the most vigorous remedial measures.

This is the more important, because each recurrence of convulsion is not only attended by immediate danger, but aggravates the morbid condition of the brain, and augments the tendency to the repetition of the paroxysms of convulsion. The same observation may be made of each contractile effort of the uterus and abdominal muscles, during parturition, which, like the fits of hooping-cough in other circumstances, has in some instances led to convulsion.

The state of the system which obtains immediately after delivery, is, in many important circumstances, different from that which exists during pregnancy and in the act of parturition.

The emptied state of the uterus and abdomen, constitutes in itself a source of inanition; and there is usually more or less of loss of blood, and sometimes even an extreme degree of hæmorrhage, so that the system in general must be considered to be in a state of exhaustion.

There can be no doubt, that this very exhaustion alone has, in some instances, induced convulsion. But it is probable that, in many, some of the causes of this terrible affection which have been mentioned, and especially a state of uterine, stomachal, or intestinal irritation, have concurred to produce this effect.

The more usual immediate consequences of delivery, and of uterine hæmorrhage, is a state of syncope; this is more or less severe and alarming, according to the degree of loss of blood, and of the susceptibility to its effects, and varies from the slightest degree of faintishness to such a state of syncope as may endanger life.

Similar effects are sometimes to be attributed to the protracted sufferings of a lingering labour; in other cases, to the violence of pain; and in others, to alarm and dreary apprehensions and anticipations on the part of the patient.

These circumstances sometimes lead to sudden death, an event which may occur immediately upon delivery. In such cases, cordials given during the last stage of labour, the recumbent position guardedly preserved, and the immediate and careful application of the abdominal bandage, may save the patient.

Perhaps the condition of the system, under the influence of some of the circumstances of parturition, cannot be better expressed than by the term "shock;" and it may be aptly compared to a similar state under very different circumstances, and especially those of a painful operation. This state of shock seems to consist in a partially suspended power and action in the system. It may be suddenly fatal; or it may yield to reaction, which may or may not pass the boundary of health; or, lastly, after some feeble efforts, it may lead to a gradual but irretrievable sinking of the vital powers. This subject has not been sufficiently noticed in medical writings, especially in connection with the parturient state.

One of the influences of shock still requires to be mentioned. Many causes of disorder may long remain dormant, or may be affecting the system in the most gradual manner only, until they are called into a more active operation by some kind of shock. This is particularly true in regard to intestinal irritation. This cause of disorder may long subsist in an inactive state, until, by the occurrence of some shock to the system, it is brought into but too effective operation. It is for this reason that the effects of intestinal irritation are so frequently observed in the puerperal state, and after various accidents, without which this cause of constitutional derangement might have long remained inoperative, or at least insufficient for the production of acute disease.

In the treatment of apoplexy or convulsions before delivery, and even after delivery, except in cases of profuse uterine hæmorrhage, the principal remedy is bloodletting; the second object is the removal of all those exciting causes of the disease which have been mentioned; and the third is cupping of the occiput and neck.

In the case of hæmorrhage, the remedies are still the removal of the exciting causes, and cupping.

It is not my intention, at present, to pursue the subject of the treatment of these affections, because it is my wish rather to confine myself to the description of some other forms of puerperal disease which have, in my opinion, been greatly overlooked. But I cannot refrain, even in this place, from pressing several points upon the attention of practitioners.

Of the absolute necessity for full bloodletting I need not speak; but I would particularly observe, that a state of exhaustion from loss of blood generally from the system, does not protect the brain from a state of vascular fulness. This I consider to be abundantly proved in the excellent paper of Dr. Kellie, in the "Medico-Chirurgical Transactions of Edinburgh," and by the fact of the occurrence of convulsions, and even of apoplexy, in this state of exhaustion. It is in this very case that cupping of the occiput is so strongly to be recommended. The

brain, in some cases of exhaustion, is relieved by the topical abstraction of a very small quantity of blood; and this relief is not only obtained by a less expenditure of blood, but is more permanent than similar relief effected by general bloodletting.

The next point upon which I would insist, is the careful removal, not of one or two, but of all sources of irritation,—of all the possible exciting causes.

A point not less important than the treatment of these affections is their prevention. I believe no means would conduce so much to this purpose as the invariable administration of copious warm water injections at some period before or during labour. The large intestines would thus be relieved of their load, and a great and fertile source of future disease would be removed. And this remark applies not to affections of the head only, but to many other puerperal diseases, as will be noticed in a subsequent chapter.

The morbid affections which occur in the puerperal, as distinguished from the parturient state, usually commence at such a period after delivery as may have given space for reaction to take place, from the state of inanition and exhaustion which usually obtains immediately upon parturition.

It should be observed, however, that there is scarcely a disease of the puerperal state which does not occasionally show itself before delivery. In these cases the disease usually remains stationary, or nearly so, until parturition has taken place, and then assumes its exasperated form.

In some instances, and those of the most serious kind, puerperal disease supervenes insidiously, and makes a slow, and probably an unheeded and fatal progress.

Even of those puerperal diseases which commence by marked symptoms, the more serious are not always the most unequivocal in their mode of attack. Pure inflammation is, for example, less marked by rigor, heat, and other obvious symptoms, than the effects of intestinal irritation. This is a point which requires to be enforced upon the attention of practitioners, for, in inflammation especially, it is of the utmost importance to detect the disease in its very origin.

I shall first treat of abdominal inflammation and its varieties; secondly, of intestinal irritation in its various forms; thirdly, of the effects of loss of blood; and fourthly, of mixed cases which combine two or more of these morbid states. I shall then resume the diagnosis, and the comparative treatment of these diseases, under separate heads.

Subsequent experience has only confirmed the opinion which I expressed seven years ago, that the effects of intestinal irritation, and of loss of blood, constitute a great part of puerperal diseases, and a great proportion of the fatal cases; and that of those fatal cases, many are rendered so by a mistaken use of the lancet.

The effects of intestinal irritation, and of loss of blood, are, indeed, as I shall proceed to show, apt to produce symptoms of increased action resembling those of inflammatory disease, and prompting the use of evacuant remedies. This proceeding is attended by two sources of error: in the first place, the symptoms are frequently relieved in the first instance,—a state of faintishness taking place of that of reaction,—and the physician is apt to judge that the remedy had relieved, but was used in too mild a degree to subdue the disease, and is thence led to a repetition of the measnre; in the second place, after the first and second moderate use of the lancet, for instance, the reaction returns in a still more violent degree than before; and it is then imagined, that the disease, though relieved, was not only not subdued, but had been suffered to make a fearful progress; the lancet is, therefore, again used, until it may be that the powers of the system yield, and sinking takes place of reaction; or, if the last bloodletting be considerable, the scene may be closed by a sudden and unexpected dissolution. I published several sad instances of this kind in a former little work upon this subject, to which, to prevent repetition, I would refer you.

I have already observed, that the effects of inflammatory action, of intestinal irritation, and of loss of blood, are alike apt to prevail in the puerperal state. It is only necessary to add, that they variously resemble each other, in different instances, so as to require the utmost attention for their diagnosis, and yet require totally different remedies for their safe treatment and cure, to give the subject all the interest of which it is susceptible.

CONTRIBUTIONS
TO THE
PATHOLOGY OF CHILDREN.

BY P. HENNIS GREEN, M.B.

Dr. Cheyne, in one of the notes appended to his "Essay on Hydrocephalus," says, "I have no hesitation in asserting that in general no cases are more loosely reported than those of hydrocephalus." This observation, the truth of which I have often felt, must be my excuse for having reported, with such minute details, the following cases of tubercular meningitis. No symptom which appeared in any way likely to throw light on the nature or diagnosis of this obscure disease has been neglected, while I believe that the observations on the changes produced in the sensibility and motility are, for the most part, if not entirely, new.

TUBERCULAR MENINGITIS.

JEANE OLIVE, 6½ years of age, came into hospital on July 24th, 1836, in the wards of M. Guersent. The mother and father of this child enjoy habitual good health; they have had four children; one died at the age of seven, with paralysis which had continued since the age of six months; the rest are all well. This child enjoyed excellent health until six months back, when she was seized with intermitting fever, which soon gave way to appropriate treatment; however, since then the patient has complained from time to time of pains in the head, in the limbs, and in the back, with some fever at night. These irregular accesses of fever, with headach, were not accompanied by vomiting; the bowels were sometimes constipated, sometimes loose; the mother did not remark any particular sleepiness during the day.

Fifteen days before she came into hospital she was seized with remarkable increase of headach and vomiting, which have constantly lasted up to the present day; the child also complained much of the abdomen, which was very tender to the touch; the skin at the commencement was very warm; the child was a little drowsy; the mother says she remarked sighing; changes of colouration from red to pale; the bowels were costive during these fifteen days; she never remarked any strabismus or convulsive movements of the face or extremities; the child was never subject to cough. On the 21st of July ten leeches were applied to the abdomen, over the region of the stomach, since when the febrile symptoms (according to the mother) diminished much. This was the only active treatment employed. No delirium during the course of the last illness.

25. Decubitus dorsal; the drowsiness is excessively slight; child merely seems to sleep gently, from which it is very easily roused, and then the face and general appearance are perfectly natural; answers are perfectly just, but voice is low, and she answers very slowly; when asked where she suffers, she says in head, and points to forehead as the seat of pain; the chest sounds quite well on percussion; no cough; the abdomen is excessively contracted, and when we press over the caput coli the child shows marks of suffering; face presents a yellow, sickly tint; does not flush up, as is often the case when the child is annoyed in meningitis; pupils are rather contracted than dilated; no strabismus; no deviation of mouth; both eyelids are very contractile; the constipation persists; no stool since she came in; but the child has vomited several times since yesterday, and one worm was observed in the contents. Now, when raised up in bed, she says she feels sick at stomach; no grinding of teeth; pulse irregular, sometimes 66, sometimes 72; the heat of skin now quite natural; forehead cool; no pulsation of temporal or carotid arteries; respiration is regular, 22; we do not observe any sighing; the tongue is clean and moist, she puts it out perfectly well; no deviation of the organ; no cough; some large mucous râle at left side of the chest, in front; says that light hurts her eyes; was a little agitated yesterday evening, but passed the night without any delirium or convulsive movement. The state of the upper and lower extremities was carefully examined: we were unable to ascertain any modification in the sensibility or motility.

Diagnosis by M. Guersent—(Meningitis of the base). Six leeches behind ears; lavement of manna; two blisters to the legs; decoction of dog's tooth for drink; strict diet.

The symptoms above detailed continued with little modification during the 26th and 27th; the drowsiness became more marked, but there was no very prominent symptom of cerebral disease; mild purgatives were administered, and sinapisms applied to the lower extremities.

28. We find the child lying awake on her back, but from time to time she falls into a state of semi-coma; the expression of the face is very anxious; there is a frown on the forehead and about the eyes which is peculiar; the child utters no complaint, nor cry; eyes natural, lids not closed, pupils are natural; lips clean; no motion of the lips, nor of muscles of face or eyes; no strabismus; face pale, does not change colour; skin of body and face free from heat; no sighing; no grinding of teeth; pulse regular, 120; respiration regular, 20; no pain in abdomen, which is still excessively contracted; constipation persists; the tongue is moist, white at middle, red at the tip; child puts it easily out; there seems a little tendency towards the left side when put out; child answers justly, but very slowly; says she has still pain in the forehead; no contracture or paralysis of limbs; no change whatever perceptible in the sensibility or motility; sees quite well; no delirium during night, but yesterday, as for previous days, had some clonic convulsions. Purgative lavement; sinapisms to legs; lemonade; strict diet.

Child lay all day in a state of profound stupor, not exactly amounting to coma; about 6 o'clock she was seized with convulsive movements, and died in a fit at 7 o'clock of 29th.

Body examined on 31st, at 10 o'clock, a.m.

External appearance.—Body is much emaciated; face pale; abdomen slightly tympanitic; no rigidity of upper or lower extremities.

Cavity of cranium.—The dimensions of the skull seem normal; on removing the cover-

ing of the cranium the dura mater presents a normal appearance; no remarkable fulness of its vessels; the arachnoid lining the convex surface of the brain is perfectly transparent in all points, free from any adhesion; the serous surface is moist; no inflammatory production, or trace of old inflammation in it; the pia mater lining the superior portion of the brain is only moderately injected; however, a little more so than in the normal state; it is easily separated in all directions from the surface of the convolutions, and nowhere presents any marks of chronic or recent inflammation; the cortical substance of the convolutions is free from injection, but everywhere softer than in the normal state; before being divided the surface of the convolutions presents somewhat of the flattened appearance seen when effusion of the lateral ventricles exists to some extent.

On examining the lower surface of the brain, externally, we find the arachnoid and pia mater equally free from inflammatory injection, lardaceous, or purulent deposit, &c. Behind and around the decussation of the optic nerves there is an evident infiltration of a transparent gelatinous-looking serum (in the pia mater), which gives the arachnoid here a somewhat opaque look. This is not very extensive; there is a similar effusion under the arachnoid, inferiorly, between the two lateral lobes of the cerebellum; it does not exist in any other points; the membranes here are neither thickened nor adherent.

When the arachnoid running across the fissures of Sylvius is divided and removed from the brain, the cortical substance underneath appears considerably moist, but not abnormally injected. There are a few miliary granulations in the pia mater lining the fissures of Sylvius on both sides, and here the pia mater is more evidently injected than anywhere else, but we do not discover any positive signs of inflammation. M. Guersent, who examined this portion of the brain with a magnifying glass, assured us of the presence of the granulations, which we did not see ourselves. On returning the brain on its base to divide the corpus callosum, this latter body gave way from the weight of the superincumbent parts, and exposed the lateral ventricles; a small quantity of serum, not more, if so much, than two ounces, now escaped, and we find the whole of the white central parts, especially the posterior portions of the lateral ventricles, both above and below, softened in the most remarkable manner; the cerebral substance is here broken up and reduced to a white pulp like curds, breaking down on the slightest touch; the medullary parts in the neighbourhood are remarkably infiltrated with serum, and very soft, easily giving way when handled, though not disorganised like the more central parts. All this portion of the brain is decoloured; we cannot discover any trace of pus, or false membrane mixed with it; the optic thalami and corpora striata when divided present a softness and paleness greater than natural; the membranes covering the cerebellum are normal; the substance itself is free from injection, and considerably firmer than the most firm portions of the cerebrum; medulla oblongata and pons varolii do not present anything abnormal; the brain and cerebellum, divided in every direction, do not contain any tubercles.

Cavity of chest.—No adhesions of the lungs to the costal pleuræ; no effusion in its cavity; the trachea and bronchia are free from injection; several of the bronchial ganglia are enlarged, and contain tubercular matter; the lungs present a normal appearance anteriorly; posteriorly they are a little congested. The pulmonary parenchyma is, throughout, souple and permeable to air, but contains, especially at the superior lobes, a great number of miliary tubercles; here the parenchyma seems to contain more blood than in the other parts, but it does not give way under the finger, and is not solidified at any point. *Pericardium* and *heart* normal.

Abdomen.—The stomach and intestines had been removed and kept in water for some time before we saw them. At the bulging extremity of the great curve there is considerable capillary arborisation; the rest of the mucous membrane is of a gray-green tint; all over the stomach's surface it is exceedingly soft; the small intestine, for a great part of its extent, is normal; however, about the ileum we find several patches of the glandulæ agminatæ that are injected and ulcerated; the edges of the ulcers are elevated, but they do not penetrate deeply into the substance of the intestine and appear as if they were of long standing; this portion of the intestine contains eleven lumbrici; the large intestine was not examined; great numbers of the mesenteric glands are tubercular.

The *spleen* is dark blue in colour, soft, and filled with miliary tubercles.

The *liver* seems normal; is of a moderate consistency; contains also a number of miliary tubercles.

The *kidneys* are large and soft, but do not present anything worthy of notice; they did not contain any tubercles.

INSIDIOUS MENINGITIS.

Maillard, Julien, 12 years of age, was received into the hospital on the 27th of June. The child lay quietly in bed, in a natural position, and appeared so little affected with a serious disease on the 28th, that I took no notice of the case, until having accidentally heard, during the evening visit, that he had vomited and complained of headach, I immediately commenced taking

down the history of the case, least it might turn out to be one of insidious meningitis.

The child's hair and eyes are dark, and the face moderately full. He says that he has been ill for ten days; the illness began with headach, and he vomited frequently, throwing up everything that was taken; the vomiting, he thinks, commenced on last Thursday, the 23rd; when he went out to walk in the fields he found himself extremely weak and listless, and was obliged to lay down on the grass. Before this last attack he had been ill for a month with pains in the abdomen; the cervical glands are not tumefied; no bleeding at the nose; no ringing in the ears; when he sits up in bed feels dizzy; no cough; tongue white and moist; *pulse* full, *regular*, *sixty;* respiration slow and regular, not sighing, 18; face moderately coloured, without the flush of fever; skin cool; some moisture on the face; before he was bled (yesterday) had some pain in the forehead and eyes, which is now less; the light is slightly distressing; no pulsation of the temporal artery; some pain about the umbilical region; no stool; was constipated for the last ten days.

M. Jadelot had ordered 10 ounces of blood to be taken from the arm yesterday, conceiving the disease to be a gastro-intestinal affection, but I cannot trace any sign of organic lesion in the abdomen. The respiratory sound is perfectly pure, and percussion gives a normal sound all over the chest. There are no sudamina or typhus spots (*taches roses*) on the neck or body; the child lies in bed on its left side, in a natural position, without making any complaint, and without any appearance of illness.

June 29. This morning the child's face was very much flushed; but now, in half an hour after the abstraction of 8 ounces of blood from the arm, it is less so; his answers are perfectly just, though he seems little intelligent, at least I cannot get a very clear account from him; there is no appearance of drowsiness; we merely remark that he answers in a *slow* peculiar manner. Having thus far noted the symptoms, I find the following remarks in my note-book:—

"We may ask what disease has this child. The history of the case which we have collected is very imperfect, and, in the absence of more complete details, it is impossible to give a decided opinion. The headach, vomiting, constipation, and slow pulse, would seem to indicate the approach of meningitis; but the headach seems very slight. We are unable to ascertain when the vomiting came on, and if, as the patient says, the disease dated ten days, there would, in all probability, be some drowsiness, which we do not at present observe. Thus, though we feel ourselves forced to admit the possibility of a cerebral affection threatening, we still keep ourselves in doubt, and would not venture to pronounce before some days. We naturally feel disinclined to say this child has hydrocephalus, and will certainly die, at a time when he seems in the enjoyment of full health, complaining of nothing but a slight headach. However, if we were to decide according to the symptoms, we must prognosticate hydrocephalus; termination fatal."

30. Face equally flushed on both sides; says when he sits up he does not see clear; lies on his back; complains of pain in the forehead; face stupid; answers a little slow; also says that he has some little pain in the abdomen; face covered with sweat; pulse full, irregular for a few beats, 58; respiration deep, perfectly regular, 16, no sighing, no desire to yawn; eyes natural in appearance, though the pupils are large; says he sees double when we show him a pen, both eyes being open; when he shuts one eye he sees singly; some tenderness of umbilical region, none of rest of abdomen; no gurgling on pressure; when he sits up in bed is dizzy, and when he goes to stool he says he feels as if drunk; no vomiting or epistaxis; no delirium at night or drowsiness by day; says he does not sleep well; no stool; tongue white and moist; no sudamina or typhus spots on chest or abdomen; no thirst; urine abundant; no cough, or pain in the throat; did not cough at home; says he feels dull pains in the limbs, and keeps his eyes open with great difficulty; is weak and feeble when he gets up to make water. No modification of the sensibility or motility. *Decoct. of mallows; gum draught;* 8 leeches to anus.

This case was sent into hospital from the Bureau Central, as one of common fever. The diagnosis written after the dictation of M. Jadelot, who fancies that he can discover disease by simply examining the patient's countenance, was,—"Affection of the intestinal canal, with colic; constipation; affection of the pharynx and upper part of the trachea; pain in swallowing; vomiting."

July 1. Yesterday, at 4 o'clock, the child fell into a kind of fit accompanied by acute cries and agitation, which lasted about six minutes; after this he did not recover his senses perfectly all night; was irregular in his words; had some delirium, and threw the hands about, and carried them often to the head, though without complaint. This latter the sister remarked as a sign of cerebral disease: she also says that he has the peculiar smell of hydrocephalus, and thinks this is the disease which the child has. He now lies in a half stupid state on the left side; answers are very slow, though just; says that the pain in the head is moderate; no vomiting; face moderately coloured; is very drowsy; though 16 leeches are attached to the temples, he does not attempt to touch them; pulse equal, regular 66; respiration deep, slow, unequal, 20; skin per-

fectly cool. Yesterday he did not recognise his uncle who came after 4 o'clock to see him; sound of chest is quite normal; no râle; no cough; no pain in the abdomen when we press on it, though he says he has pain there: it is moderately retracted; avoids light, and says he cannot keep his eyes open; no complaint whatever now; lies as if asleep; no tossing in bed nor motion of the hands; no movement of the muscles of the face; no contractility of the eyelids; no strabismus; no deviation of the mouth, or convulsive motion of the muscles; no modification of sensibility or motility; no stool; passed a little mucus after lavement; tongue moist, whitish, no deviation, puts it well out.

M. Jadelot was now forced to recognise the presence of meningitis. He ordered 16 leeches to the temples, a purgative enema, blisters to the legs, and cold compresses to the head.

July 2. The child lies on the right side; face moderately coloured; speaks very slow; no strabismus; pain in forehead; tongue moist and white; no deviation of mouth; pulse full, slightly irregular, 72; skin warmer than yesterday; respiration equal, 26, not oppressed nor sighing; dull, uneasy look; lies with his eyes closed; says he does not see clear; no pain in the abdomen; no vomiting; no modification of motility or sensibility; is always a little drowsy; is unable to walk to the close stool; only one stool after lavement; no agitation at night, did not cry, nor was delirious.—Draught with nitre; nitre whey; blisters to legs; tepid bath (25° R.), with cold affusion on the head.

4. The child lies tranquilly, as if asleep, on the left side; face moderately though naturally coloured at both sides, covered with sweat; skin cool; respiration equal, not sighing, 22; pulse 76, slightly unequal and irregular, full; answers when spoken to, but the answers are extremely slow, and voice weak; began to wander a little this night for the first time, drawing the bedclothes about with the hands, and asking for his pantaloons; now answers justly; hearing is dull; tongue whitish, but clean and moist; pupils not dilated, osscilating on admission of light; lids not contractile; still pain in head, particularly at right temple; also says that cervical and dorsal vertebræ are painful, but when we touch the abdomen or chest he says they are equally painful; sees still; is constipated; says he feels as if drunk; cannot keep eyelids open; abdomen slightly tense, with some slight pain and sense of gurgling in the right iliac region; some slight strabismus; no deviation of mouth or tongue; now and then some slight convulsive starts of the muscles of the arms; no sudamina on the neck; no typhus spots on the body; no modification of sensibility, or contractility of muscles.

5. Lies sleepy on the left side; small convulsive twitches of the two last fingers of the right hand; had a good deal of delirium at night; now hears pretty well, and answers justly, answers excessively slow; still pain in the forehead, shows the part where he suffers with his hand; was greatly agitated during the night; the nurse was obliged to tie him, as he wanted to get out of bed; lies with lids quite closed; face now pale; lips half open, no crust on them, nor are they dry; no strabismus; eyes not injected, pupils moderately dilated, sight conserved; was in a state of coma from five to nine last evening, with violent agitation; did not cry out during the night; turns from time to time from the left to the right side; no coma now, merely stupor, from which he is drawn when we speak to him; the sister said that he was very stiff during the night; no stool for the last three days, nor any urine passed since yesterday evening; pulse full, vibrating, regular, 108; respiration regular, natural, 30; skin dry and warm; no contracture of arms; no loss of motion; insensibility seems a little diminished; now complains spontaneously of pain in the head, which he did not do before; picks his upper lip; abdomen contracted, not painful, no gurgling, no sudamina, or spots; whole trunk is remarkably stiff, when we take him in the arms behind his head, and try to make him sit up, it is impossible to raise him on his seat; he is like a bit of board; no deviation of mouth; no convulsive movement of the muscles of the eyes, lids, or face; slight frown on the face about the eyes; when he closes the lids the right one closes more quickly and completely than the left; now no pain in the neck or back.—Continue the remedies.

6. Not so much delirium last night; is very deaf, and does not now answer, though he answered better a little while ago; no stool; made water several times; strabismus was well marked this morning, but not at all so now; lies with lids half open; decubitus dorsal; face pale, a little colouration at the left side; no deviation of mouth; lips perfectly clean, dry; respiration is simply accelerated, 36; tongue clean, getting dry, no crust on it; perfect immobility of face; he now lies with the eyelids open, in a state of waking coma; pupils neither contracted nor dilated; little sensibility of the integuments of the face; when a fly passes along the cornea he hardly notices it; eyeballs perfectly fixed and staring forwards when the eyes are wide open; forehead moderately warm; face cool; no beating of temporal arteries; skin of body warm and dry; no rigidity of upper extremities, nor any paralysis of them; the sensibility is but slightly modified. He did not speak during the night, nor this morning; abdomen contracted, not painful to the touch; the trunk is less stiff than it was yesterday, but the

head is rigid and thrown back; there is some contracture now of the right arm; no stiffness of the legs, nor loss of motion; no contraction of the eyelids, nor convulsive motion of any muscle of the body.—*Calomel*, gr. viii.; purgative enema; sinapisms to the legs; nitre whey; ice to head.

7. Decubitus dorsal; face pale; eyelids shut; appears perfectly tranquil; skin warm and dry; lips clean and dry; mouth not deviated; no motion of muscles; lids not contractile; no dilatation, rather contraction of pupils; no paralysis or contracture of extremities; sensibility exists equally on both sides, but it is a little more obtuse than normal; pulse full, vibrating, 100, somewhat unequal; respiration calm, regular, not sighing, 28; abdomen rather retracted, not painful, some little crepitation to the touch at the lower part; lower jaw rigid; tongue is dry and white; we now, for the first time, remark that he colours up when touched; he picks the nose, and upper part of the nares; he does not hear, and shows no sign of being able to see; returns no answer when spoken to. We cannot observe the existence of strabismus; no typhoid spots on the chest or abdomen; no subsultus tendinum; the child does not cry, but lies exactly as if he were in a profound sleep; constipation persists; no alteration in the motility or sensibility of the lower extremities; no delirium last night; no cough; the patient is much less agitated while the ice-cap remains on the head.—Continue the ice-cap and the other remedies.

8. The patient lies quietly, and does appear very stupid; barely drowsy in appearance; eyes open, not dull; position in bed natural; tongue white, but moist, he can protrude it with ease; hearing dull; face neither pale nor coloured; some strabismus during the night; pupils not dilated; no stool; passed urine three times in bed; skin of face cool; no mark of sensibility in the abdomen when pressed upon; no gurgling sound in the iliac region, or typhus spots on the surface; colour rises to child's face whenever he is disturbed; he is now unable to speak, but could do so at seven o'clock this morning; the back is still very stiff; the right arm is also rigid and somewhat insensible, but the nurse says that these symptoms are temporary only. After a lapse of an hour the eyes were again examined, when the left pupil was found to be a little dilated, the right one natural; both were insensible to the stimulus of light; respiration perfectly tranquil, regular, 22; pulse very full, strong, vibrating, slightly irregular in strength and regularity of its beats, 90; some slight subsultus tendinum at the wrist; skin is very slightly warm; nose and lips quite clean. He is constantly picking the nose and upper part of the shirt with his fingers, like one affected with typhus fever.—Continue remedies.

9. Decubitus dorsal; he is much less drowsy to day; hears well and puts out his tongue easily when spoken to, it is white and moist; eyelids half open; sees well; complains of pain in the head; questions seem to fatigue him; face thin, of a natural colour; mouth not distorted; no movement of muscles; skin perfectly cool; the stupor comes on much more marked at times; he drinks well; the effort makes the colour mount to face; pulse not so full or strong as yesterday, 120; respiration regular and free, 30; no stiffness or relaxation of left hand, it is pretty sensible; abdomen retracted, not sensible to the touch; the body was much less stiff yesterday, after the bath; no convulsive movement of any part of the body; no contraction or paralysis of the lower or upper extremities.—Continue remedies and bath, with cold affusion.

10. Little change in the symptoms; he seems to suffer pain when pressure is made on the left side of the abdomen; the neck and trunk are extremely stiff, but the lower extremities are relaxed; no deviation of the mouth; face equably and moderately coloured; no convulsive movement of its muscles, or of those of the limbs.

11. The child is now lying in the last stage of insensibility, with the death rattle occasionally ringing in his throat. The left eyelid is closed; the right one half open; neither lid contractile; the right pupil is extremely contracted; the left one very slightly dilated; neither oscillate on the admission of light; nose and lips clean, but dry; lower jaw firmly locked; respiration 48, not much oppressed; it is rather performed by an undulating movement of the chest than regular elevation; pulse full and regular, 130; skin very hot; both arms perfectly paralytic; the sensibility is much more acute in the right than in the left arm; the abdomen is excessively retracted, without being very tense; there are no convulsive movements of the limbs, or muscles of the face.

This state of coma continued during the night, and the child died in a short convulsion on the morning of the 12th.

Body examined, July 13th, 1836, at 9 o'clock, a.m.

External habit.—Extreme rigidity of superior and inferior extremities; right arm is more rigid than left; fingers are bent on the palms of the hands, and very stiff; nails and tips of fingers very blue, with little corrugation of the skin; abdomen tumid, with greenish colour of abdominal parietes; posterior surface of arms, of back, and of legs of an uniform blue colour.

Head.—On turning down the pericranium, the veins which run along its inner surface are found injected, especially at the posterior part. The external surface of the dura mater is moist. The middle menin-

geal arteries fully distended with blood. On either side, posteriorly, we observe large patches of light-coloured sanguineous effusion under the dura mater; the veins which run along the convolutions are also seen distended with blood, through the fibrous membrane.

Dura mater presents nothing abnormal; no change of the arachnoid lining this membrane; no effusion, nor false membrane in the great cavity of the arachnoid; nor any trace of adhesions between its two layers. The arachnoid lining the superior surface of the brain is quite moist. The cerebral convolutions do not protrude when the dura mater is divided, nor do they present that flattened compressed appearance indicating effusion into the lateral ventricles. The arachnoid conserves its normal transparency; the pia mater is very much injected throughout, at the superior surface of brain, especially at the anterior part, on the right side, on a level with the temple, where there is a uniform effusion of sero-sanguineous fluid under the arachnoid. The pia mater in this part is slightly thickened, and seems to adhere to the gray substance; however, it comes away with very little pressure; only here and there a very small point of cerebral pulp tears away with it, and although the gray matter is, generally speaking, softer than natural, there is no evident ramollissement or breaking down of the pulp at any part. The pia mater, which dips between the convolutions anteriorly, is of a rich red colour, but is separated from the cortical substance with sufficient readiness. The cellular membrane on the left side of the anterior part of the brain is also much injected, but less evidently thickened than at the right side. No change whatever of the membranes or cortical substance accompanies the effusion on the posterior lobes, which is probably cadaveric, or accidental. On the upper part of the left hemisphere, midway from the great fissure to the side, we observe a small yellow point, not larger than a good sized pin's head; on examining this it is found to be a small tubercle developed in the pia mater. There is a similar one of smaller size on the surface of the right hemisphere in the pia mater; there is no change of the cerebral substance round these small bodies, nor any particular injection of the membrane.

Substance of brain.—Corpus callosum is firm; the white substance, when cut in slices, shows numerous bleeding points. On opening the lateral ventricles we find no dilatation of these cavities; each contains about half a spoonful of reddish serum. The plexus choroides and velum interpositum are remarkably pale, when compared with the rich colour of the pia mater on the surface of brain. The inferior layer of the corpus callosum, forming the roof of the lateral ventricles, is quite firm. The septum lucidum exists entire, but gives way a little in the middle, when the fornix is raised; the latter body is slightly softened, both anteriorly and posteriorly, near the commissures. The membrane lining the lateral ventricles does not present any abnormal appearance. The thalami and corpora striata are by no means so firm as the upper parts of the brain; they are not much injected, and give way under slight pressure with the finger, as in a brain beginning to decompose. In the centre of the corpus striatum there appears a commencement of ramollissement; at least, on dividing this part with a bistoury, a small point near the traject of the blade gave way from the pressure of the cut, and the slightest pressure enlarges the rent for about one or two lines in all directions; we cannot, however, affirm that any change of colour exists in this limited point. The membranes at the base of the brain are injected, but in a less degree than superiorly; there is no appearance of purulent secretion or lardaceous deposit about the optic nerves, or at the fissure of Sylvius, on either side; no adherence of the membranes to the surface of the brain; no ramollissement of the cortical substance at this part. We can discover no granulations in any part of the pia mater; however the membrane was not examined throughout with the great care employed on several other occasions. The cerebellum, its ventricle and membranes normal; the substance of the cerebellum generally very soft. Pons varolii not injected interiorly; no change in its substance; the greater part of the brain and the whole of the cerebellum divided without any trace of tubercle in them being found.

Spinal marrow.—On dividing the dura mater, and making an opening into arachnoid, a considerable quantity of reddish serum, similar to that in the lateral ventricles, flows out. The superior surface of the spinal marrow (*i. e.*, pia mater of), is but slightly injected; at the middle and inferior portions the vessels are more numerous, but no appearance of inflammation exists. The whole of the spinal marrow was examined from top to bottom; no injection of medullary substance; it is throughout remarkably soft, as the cerebellum.

Mouth.—Child (12 years old) has 14 teeth in both upper and under jaw; they are perfectly regular in their appearance; the third tooth on the left side from the last incisor (first molar) is raised about 1½ line above the level of the gum; the corresponding tooth on the opposite side is much more advanced; the last inferior molars have just appeared above the jaw; the superior molars (last) are more advanced, and both look obliquely inwards.

Chest.—Both lungs are united posteriorly, by old adhesions, to the parietes of chest; the false membrane is not extensive; no

effusion into the cavity. Externally the lungs present a healthy appearance; they are of a gray, mottled blue colour; posteriorly of a deep blue from congestion. When divided the parenchyma is found souple and crepitant throughout; however the superior lobes of both right and left lungs contain a great number of miliary tubercles; and the posterior parts are congested above and below; this congestion seems cadaveric, for the lung is soft here, and contains air; it is not friable. The bronchial glands are converted into very large masses of tubercular matter, some of which are softened in the centre. The lining membrane of the bronchi is moderately injected; they contain no mucus, nor other fluid. We do not perceive any tubercles in the inferior lobes.

The *Heart* is remarkably flaccid,—it contains no clot; valves normal; the lining membrane of aorta and pulmonary artery at origin is of a deep red colour; no marks of inflammation about them. Dimensions of the heart:—breadth, 3½ inches; height, 3; thickness of left ventricle, 4 lines; of septum ventriculorum, 4 lines; thickness of right ventricle, 1 line; diameter of aorta and pulmonary artery, 2 inches each.

Cavity of abdomen.—Stomach internally of a light gray colour. Large patches of the mucous membrane are raised up by emphysema, the effect of decomposition, hence we did not attempt to determine the consistence; no injection of mucous membrane at any part.

The intestines are moderately distended with gas. The whole of the upper part of the small intestine is perfectly free from injection; is lined with a mucous fluid of a yellow green colour, from bile; the rest is pale and thin; valve of cœcum normal. The whole of the great intestine presents a normal appearance, except a portion of the ascending arch of the colon. Here there is a large mass of indurated fæces, distending the bowel into a bag, and enveloping 10 very large lumbrici. About two inches of the intestine, corresponding to this mass, is highly injected, and the mucous membrane softened. The mesenteric glands are free from tubercular deposit, and are not enlarged.

Liver large, soft, of a light chocolate colour, 8½ inches long, 6 broad, 2 deep; the superior surface is free from any injection or marks of inflammation; no tubercles under lining membrane, or in its substance. The gall-bladder contains a small quantity of green fluid bile.

Spleen, 4 inches long, 2 inches 3 lines broad, 1 inch deep; is of a light red-brown colour; contains a great number of miliary tubercles in its substance, and under the capsule.

Kidneys large, soft, of normal appearance; no granulations or tubercles in their substance, or under the capsule.

Bladder is distended; contains a quantity of turbid urine; its inner surface is of a pale pink colour, from the numerous vessels which ramify in the lining membrane.

ROYAL INSTITUTION.

Friday, June 8, 1838.

PROFESSOR FARADAY ON THE IDENTITY OF INSULATION AND CONDUCTION.

Dr. Faraday is universally admitted to be amongst British chemists *facile princeps*. This evening, when the final meeting of the members for the season occurred, a dense crowd of the votaries of philosophy and of fashion, filled every nook and cranny of the theatre. The object of the Professor was to demonstrate to his audience certain experiments upon which he had been recently engaged, and the generalisation which he wished to base upon them. Epinus, Cavendish, and Poisson, he said, were acquainted with the facts which he was about to illustrate, but they considered them as simple elements, and did not attempt to reduce them to any more general principle. The properties of insulation and conduction, for example, were considered as distinct, if not antagonist truths, and not as different degrees of the same principle. Dr. Faraday proposed by his experiments to show that these facts are but examples of the same principle, and that the electric fluid acts not at sensible distances, but through the medium of intermediate molecules, which become successively polarised.

The Professor first employed for this purpose a large electrifying machine, supplied as usual with a long metallic cylinder or conductor. On this was placed the graduated electrometer. Of course this conductor was insulated in the proper manner, and was easy to charge from the powerful plate. To show that bodies possessed various degrees of insulation and conduction, the conductor was made to communicate with the earth by means of substances reputed either as conductors or insulators, and it was found that the electrometer was on each occasion affected to a different degree when the conductor was charged. Thus with glass the conductor lost not any perceptible quantity of its electricity, and the electrometer was fully affected. With gum lac the effect was less; with silk still less; with wood less again, and with metals not at all. These effects clearly proved the existence of different *degrees* of the same power, and that consequently no such thing existed as an absolute property of conduction, and another of insulation in these bodies.

The metals also possess the power of con-

duction in different degrees, though these degrees are not shown with the common electrical machine. In order to illustrate the difference of the metals in this respect, Dr. Faraday had a number of wires drawn of precisely the same calibre. These were placed successively between the poles of a Voltaic pile of a given and uniform strength. This uniform continuance of the strength of the Voltaic battery was shown by the following ingenious contrivance of Professor Daniell, of King's College. A platinum wire extended between two poles was fixed in a glass cylinder, and when placed between the poles of the Galvanic apparatus, presented a certain degree of illumination. To this degree the Professor called the attention of his auditory, and stated that at the end of the lecture they would have an opportunity of judging whether the power of the apparatus remained unaltered.

A certain length of copper wire of the given thickness inserted between the poles was illuminated; an equal length of silver became melted, and zinc was instantly destroyed; but the lengths of wire of iron and of platinum which were rendered luminous by this power, were much shorter, the length illuminated being a direct measure of the conducting power of the several wires. A compound wire consisting of alternate portions of copper, platinum, and silver being subjected to the battery exhibited a singular effect. The portions of platinum were illuminated, but those of silver and copper were not. This phenomenon is explained by considering that the electric fluid passed rapidly through the copper and silver, but its longer detention in the platinum evolved a higher degree of temperature. Thus these two metals which when singly placed between the poles acted as insulators, and became heated in consequence, when placed in contact with inferior conductors, such as the platinum, became conductors. Moreover the same body may, by altering its temperature, become either an insulator or conductor, that is, it may exhibit different degrees of the same property. This the lecturer illustrated by two most beautiful and delicate experiments. A platinum wire being placed between the poles of the battery exhibited a certain height of temperature, but when allowed to fall down in the form of a loop by the approximation of the poles, and the arc of the loop being placed in water, the illumination of the remainder was immediately and strikingly augmented. The lessened temperature of one part increased its power of conduction, whilst the remainder continued in its character of insulator, as exhibited by its increased luminosity.

Decrease of temperature does not in all bodies augment the power of conduction, as was shown by an experiment. A piece of the sulphuret of silver, quite cold, was placed in the circle, and no effect was indicated by the attached galvanometer; but when the temperature was raised the needle was violently deflected. When the sulphuret was cooled again, the needle remained neutral on contact being made.

According to this theory of Faraday's each body possesses the property of insulation and conduction, and either of these properties may be brought out by appropriate arrangements. Thus, according to the old theories, air is a non-conductor, and metallic wire a conductor, but metallic wire may be shown to be an insulator and air a conductor. To prove this the Professor made this experiment; having charged a Leyden phial, he disposed two channels through which its contents might communicate with the earth; the one was a very long wire (in fact many yards in length), the other a stratum of air between two brass balls; when the charge of the phial was slight, the wire communication was preferred, but when strong the short road through the intervening atmospheric stratum was chosen. In this instance the time taken up in the successive polarisation of the constituent atoms of the very long wire, was greater than that consumed in the polarisation of the comparatively few molecules of air.

Dr. Faraday, in explaining his theory or hypothesis of polarisation, stated that he conceived all bodies, solid, fluid, and aerial, to be composed of certain definite particles or molecules arranged at certain distances from each other, and that the transmission of the electric fluid through any medium was effected by the successive polarisation of every one of these particles. He illustrated his views by a diagram, and by the following beautiful and satisfactory experiment. Having suspended by a glass wire a very fine beam (made of some very light materials), at one end of which was attached vertically a small disk of paper, he made this an index of the nature of the electricity, whether positive or negative. He now placed in communication with the conductor of the electrifying machine three balls, or magnified ultimate particles; the middle of these was divided into hemispheres. Having placed them in contact with the conductor, he, by means of the index just described, demonstrated that when one side of the ball was positively the other was negatively electrified, and this through the entire series. This was the experimentum crucis, and appeared to satisfy all the judges present as to the correctness of the Professor's view.

The difference in the electrical character of bodies, he repeated, was due solely to the difference of facility with which these successive polarisations took place. When the transmission of the electric matter was rapid little or no derangement took place in the nature of the body, but important chemical and mechanical changes attended its trans-

mission in great force through difficultly polarised elements. As a proof of the innocuousness of large doses of electricity when transmitted through good conductors, Dr. Faraday armed a powerful Leyden phial, which if ordinarily discharged into the system of any person would strike him senseless. This charge he passed through his own body, by means of a moistened cord, with perfect impunity.

At the conclusion Dr. Faraday afforded a proof to the company of the unaltered strength of the Galvanic pile employed, by showing the same degree of illumination of the platinum test of Mr. Daniell, as that exhibited at the commencement of the experiments.

The Professor took his leave of the members for the season, paying them the customary compliments.

The substance of this lecture is to be published in the forthcoming volume of the "Philosophical Transactions."

PHRENOLOGICAL SOCIETY OF LONDON.

John Elliotson, M.D., F.R.S., President, in the Chair.

The minutes of the preceding meeting were read and confirmed.

T. Lamie Murray, Esq., of Hill-street;

Richard Birnie, Esq., of the Inner Temple; and

Hudson Lowe, Esq., of Newman-street,

having been proposed and ballotted for, were elected ordinary members of the Society.

Dr. Elliotson laid before the Society an account of two gentlemen in whom the power of distinguishing colours was defective, and at the same time presented masks of them. He stated that Gall pointed out that some persons are incapable of distinguishing a marked difference between two colours.

Dr. Elliotson mentioned that the inability to distinguish certain colours, was very common, was frequently hereditary, and occurred much more frequently in males than in females. Dr. Nicholl, in the "Medico-Chirurgical Transactions," vol. 7, describes a boy who confounded green with red, and called light green and pink, blue. His maternal grandfather and one uncle had the same imperfection. This uncle was in the Navy, and having a blue uniform coat and waistcoat, purchased a pair of red breeches to match. Dr. Nicholl mentions a gentleman who could not distinguish green from red; grass in full verdure always appeared to him what others called red; and ripe fruit on the trees he could not distinguish from the leaves. A cucumber and a boiled lobster were the same colour in his sight, and a leek resembled a stick of sealing-wax. This person had a brother and a neice, the daughter of another brother, in a similar predicament (L. C., vol. ix.). A similar case is mentioned by Dr. Priestley, in the "Philosophical Transactions" for 1777, and the man had two brothers with the same defect. In the volume for 1778 a similar case is described, in which the gentleman's father, maternal uncle, one sister, and two of her sons, were similarly circumstanced. He mistook pink for pale blue, and full red for full green; all kinds of yellow and blue, except sky-blue, he could distinguish with great nicety. Mr. Combe mentions three brothers and a cousin who inherited the defect from the maternal grandfather, the intervening generation not having it. Professor Dugald Stewart could not perceive any difference in the colour of the scarlet fruit of the Siberian crab and that of its leaves. Sir D. Brewster examined a gentleman who saw only two colours in the spectrum, viz., yellow and blue; when the middle of the red space was absorbed by a blue glass, he saw the black space with what he called the yellow on each side. Dr. Dalton was unable to distinguish blue from pink by daylight, and in the solar spectrum the red was scarcely visible to him. Mr. Troughton had the same defect, and was capable of fully appreciating only blue and yellow colours, and when he names colours, the names of blue and yellow correspond to the more or less refrangible rays, all those which belong to the former exciting the sensation of blueness, and those which belong to the latter the sensation of yellowness, as I find in Sir David Brewster's "Treatise on Optics." This author mentions also a shoemaker at Allenby who was unable from his infancy to distinguish the cherries of a cherry-tree in so far as their colour was concerned. Two of his brothers always mistook orange for grass-green, and light-green for yellow. Hains himself could only distinguish black and white. A tailor at Plymouth regarded the solar spectrum as consisting of only yellow and light. We learn from these cases, said Dr. E., not only that the deficiency may be hereditary, and in all probability occurs most frequently in males, but that the defect relates most frequently to only one of these primitive colours, and that that one is the red. He then read an account drawn up by two young gentlemen of University College, London, who were deficient in their sense of colour. The first has the ordinary deficiency of insensibility to one colour only, and that colour is red. The other has the rare deficiency of being insensible to two of the primitive colours, so that everything appears to him as of one colour, and it is not known to which two of the three primitive colours he is insensible.

Dr. Elliotson read the following account written by the gentleman deficient in the red

ray:—"The only colours I can recognise with certainty are blue and yellow. The rainbow and prismatic spectrum appear to me to be composed of only two colours, which seem to become gradually intermixed in the centre, and to subside towards the margins. I have not ascertained whether I see the whole breadth of the spectrum, the other colour appearing as blue or yellow, or whether I do not perceive some of them at all. If two colours are placed close together with a well marked line of demarcation between them, I readily perceive that they are not similar, and I believe that it is in consequence of those of the rainbow and spectrum passing in some measure into each other, instead of terminating abruptly by a defined line, that I cannot observe the difference between them; for if I see the prismatic colours painted on paper their dissimilarity is quite evident, although I cannot say, excepting the blue and yellow, what colours they are. I perceive the slightest difference in shade, but in some instances two different colours, several of the shades of red and green, for example, appear to me to be only different shades of the same colour; and, on the other hand, what is only another shade, sometimes appears of a different colour. I have frequently observed that on adding water to tincture of cardamoms, which at first looks red, after the dilution has reached to a certain point the fluid appears to me to change suddenly to blue. I experience greater difficulty in distinguishing very light and very dark shades of colour, the former appearing colourless, the latter black. Transparent substances I distinguish with greater difficulty than opaque. I never could observe any change of colour in the human countenance when viewed by means of the monochromatic light given out during the combustion of alcohol with salt. Blue and yellow, I can always recognise; I never confound these with other colours, and I can discern these when the object is at a distance, or if very minute, as a narrow line or small spot; this I can do with no other colour. The only red colours I can recognise with certainty are bright scarlet and crimson; but the former of these I do not know from grass-green unless the two colours are placed side by side. I have often seen a field completely covered with the blossoms of the common poppy, papaver rhœas, but never could observe any difference between it and one covered with grass, unless I approached it sufficiently near to observe the individual flowers. Pink or rose, for instance, appears to me blue by day and red by candle-light. Purple looks like dark blue. Many of the shades of red, green, and brown I cannot distinguish from each other. I never could observe the beautiful shades of colour which foliage assumes in autumn, and which I hear so much admired. The only changes I perceive are that some leaves become yellow, and the colour of the remainder less vivid than in summer. Brown appears to me not to be a colour but only a shade, and I imagine that if made very deep it would be identical with black."

The following is the account of the gentleman who is deficient in discerning two primitive colours, but it is not known which of the three these are:—"I can see a difference in colours placed side by side, but cannot state with any degree of accuracy the names of them individually. I would not swear to any colour, but can often guess pretty accurately the colours of many articles, by considering the purposes for which the colours are frequently used; for example, I know grass is green, but if the same colour were shown me in a different form, I perhaps should not recognise it as the same. Again, I know gold is yellow, and silver white. I can immediately distinguish at some distance a sovereign from a shilling, not by its difference in colour, for that I never think of in forming a judgment, but by their general appearance. I cannot tell a gold from a silver watch by its colour, but if I take it in my hand, I soon can tell the difference by its weight. I am frequently asked the colour of a window-curtain, and I sometimes guess right, more frequently wrong. I know that curtains are generally either blue, red, or green, and I turn it over in my mind which of the three I think most like. What first called my attention to it was, when at school I was for a short time in the habit of drawing and painting maps; for this I purchased a box of colours; after a time the names were rubbed off; then I could no longer distinguish them, so I was obliged to part with them, as they were useless to me. When in mourning for my father I bought a green coat of a dark colour, and was not aware of my mistake until a friend asked me how long I had left off mourning. I was for several years exceedingly puzzled with the rainbow, which I had heard everybody speak of as being so very beautiful; it always appeared to me as a band of a lighter colour than the other part of the sky, but a little darker at one side than the other, and gradually shaded off between the two sides; but this was fully explained when I looked through a prism, which gave me exactly the same appearance, with the exception that I thought I saw through the misty shading an appearance of two or three indistinct colours.

"I have written this as correctly as I can, but cannot state particulars more minutely with any degree of certainty, on account of the difficulty I find in ascertaining my own deficiencies, from not being certain of any colour."

The casts of these gentlemen were then exhibited, and the deficiency in the situation of the organ of colour was very striking. The author took occasion to point out the

importance of phrenology not only in determining the faculties of the mind, but in referring various phenomena to their true causes. Without an examination of the development of the brain at a particular spot in persons remarkable for their acuteness or deficiency of judgment of colours, this would not be ascribed to its true cause, and the most singular explanation would be given of its deficiency; for example, Professor Dugald Stewart ascribes it to a defect in the power of conception, and this as resulting probably from some early habit of inattention. But what particular attention do children who distinguish colours accurately bestow? They distinguish without effort, and those who cannot are not only not proved to have been inattentive, but have most probably been often extraordinarily attentive, in the hope of seeing what others can see. How should want of attention to this one point be hereditary in families passing through a generation, &c.? This is a specimen of the errors of metaphysicians; they see and generally acknowledge that the brain is the organ of the mind, yet they observe the faculties of the mind without even once considering the organ which possesses, or is employed, in the working of these faculties. Gall examined the two together, and we now know, through him, that local deficiency of brain both exists where the faculty of distinguishing colours is deficient and is hereditary; with this deficiency Dr. Dalton has endeavoured to explain this peculiarity in vision in his own case, by supposing that the vitreous humour is blue, and therefore absorbs a great portion of the red rays, and other least refrangible rays; but this opinion, says Sir David Brewster, is, we think, not well founded. Sir David's own opinion, however, is founded no better, for he speaks of the defect as a singular effect of the retina. Sir John Herschell, though no doubt unacquainted with phrenology, adopts the true opinion, and attributes (in the "Encyclopædia Metropolitana") this state of vision to a defect in the sensorium, by which it is rendered incapable of appreciating those differences between rays on which their colour depends.

Dr. Elliotson, showing that an advance had been made upon this subject since the time of Gall, by the establishing the fact that the deficiency related commonly to the red ray, urged the necessity of collecting as many of these cases as possible, with a view of determining the relative frequency of deficiency in regard to the yellow and the blue ray, and of deficiency in regard to any two of the three primitive rays. He also suggested that it would be interesting to learn whether some cases of blindness, in which the eye appeared perfect, depended upon an inability to discern any of the three primitive rays, and were attended by a total absence of the organ of colour. He also, after remarking that all cases of deficiency of the power of distinguishing colour hitherto examined, had been attended by a defective development of the organ, suggested that the form and extent of the deficiency of the organ should be carefully noted in every case, that it might be known what relation, if any, existed between these and the deficiency of judgment.

UNIVERSITY COLLEGE HOSPITAL.

ANIMAL MAGNETISM.

FIFTH REPORT OF EXPERIMENTS AND FACTS.

THE various states of mind and body which the two girls, Elizabeth and Jane O'Key, exhibit on different occasions, are in every respect curious and interesting, whether contemplated as the real phenomena of disease, or even as conditions which are voluntarily assumed. Regarded in the former light they are singularly impressive as illustrations of insanity, *producible at will*, by any operator, lasting almost at his pleasure, and developing rare forms and peculiarities of mental alienation. If viewed as the efforts of dissimulators, they are equally remarkable as instances of perfection in acting and deception which defy the most vigilant scrutiny to detect proofs of the imposition. True, there are not wanting those who pronounce or suspect the whole to be trick, but these gentlemen either boldly denounce the patients as cheats, without having watched them at all, or having seen them, still offer only *conjectural proofs* that the *sleep*, or the temporary *madness*, is simulated. Yet under the circumstances, considering how many able scientific men, of high reputation for sagacity and penetration, are known to have avowed in private that they accredit the good faith of the girls, it is not sufficient, to ensure a conversion to opinions in favour of the alleged dissimulation, that the patients should be denounced in round and general terms. Unprejudiced believers in their honesty,—careful personal observers of facts,—reasonably require more exact and well-authenticated evidences on this side of the question, than they say have yet been offered to their notice, although facilities for observation and detection have been open to all parties, and might be effectually ensured. Some gentlemen acknowledge the coma and stupefaction to be undoubtedly real, but do not accredit the phenomena which occur in the latter state. (Few or none occur during the former.) But it is replied, that their observations, reflections, and comparisons respecting them have been too limited; and it is undoubtedly true that the highest degree of patience, carefulness, and

delicacy is required, in noticing the insanity; but this, it is obvious, it can fall to the lot of but few persons to exercise, the opportunities for undisturbed investigations of the phenomena being of the same rarity as if the inquiry had to be made by unprepared observers in the retreat of a chemical laboratory. Like experiments hastily performed on inanimate substances, those which are carelessly tried with these patients continually give anomalous and seemingly contradictory results,—a fact which instantly forces us back to what we have already pronounced to be the first and most essential of all questions in this inquiry,—*Is* THE SLEEP *real?*

The reply to this inquiry must not only derive support from the evidences which are presented to notice during the sleep itself,—it should also be sought for in other of the states and events which occur to the patients, and in a careful watching of *the character*, and a knowledge of *the history*, of the girls, who are members of a family of nine children; for it is to be remembered that the more obvious proofs of sleep, namely, the general appearance, the condition of the eyes, the immobility of feature and limb during the infliction of pain, may all be fallacious. Illustrations of this have recently been fully supplied in the hospital. Some patients were detected in the simulation of somnambulism, a few days since, after having resisted numerous severe tests of pain,—adding a new page to the chapter of precautions against being deceived by the simulation of morbid states. One of these patients, a woman (A. Ross) had, at her own request (being taken at her word), two teeth drawn, during periods of assumed sleep, without, as we were informed, presenting the slightest indication of suffering under either operation. This woman confessed, at last, to Dr. Elliotson, on being charged with imposition, that the sleep was a deception. The reality of the attacks of epilepsy for which she was admitted, were not questioned. We did not ourselves at any time chance to see her in the affected somnambulism. She ultimately began to affect *delirium*, and by the shallowness of the trick exposed the whole. Another patient was a girl who imitated the *sudden* sleep of O'Key, but who never fell, in reply to a pass, in a manner that could hurt her, yet who, when down, would suffer so many smart shocks of pain without flinching, that however strong the belief in her deception, actual *proof* of it could not be obtained from that test. We happened to see the imitations of this girl only on one occasion, and then during a singular scene, when, although the girl would not exhibit a sense of pain, the shamming of sleep became quite apparent by the placing what she believed to be the foul end of a glyster-pipe in her mouth. She at once opened her eyes and arose, though she still remained so obstinate in her inclination to imitate, that at the very next pass she again sank down, affecting sleep. This girl, however, always failed to enact her part when the wave of the hand was made beyond her range of vision. An account of these cases was given by Dr. Elliotson in a clinical lecture on the 5th instant, and its publication will render further details respecting them unnecessary here;* but an incident occurred with regard to this girl (Charlotte Bentley) which, as it illustrates one variety in the madness of Elizabeth O'Key, we shall narrate.

Attention was more particularly drawn to this girl's proceedings by a reply of Elizabeth O'Key during somnambulism respecting her.† On being asked how the decep-

* A report of this lecture is before us, but we cannot find room for it this week.

† Some circumstances connected with this matter may be noticed here. It appeared strange that O'Key should notice during "somnambulism," when her faculties seem to be excessively keen, that this girl was practising deception, and that she should not announce the shamming of Ross. At a visit on the 6th instant, to watch the general conduct of the two sisters, we questioned her on the sources of her suspicion. She was, on this occasion, in her natural state, perfectly sane, and apparently unconscious of her denouncement of the girl, and of the measures to expose her which we shall above describe her as having employed during somnambulism. Being made aware that she had impeached the girl, she said she had had reason to believe her to be very artful, having detected her in many falsehoods, but as it was "no business of hers" she had not mentioned it to any one. The kind of untruths she could not recollect exactly, as "they were," she said "mostly frivolous nonsense, but still they showed her artfulness." "But how did you know them to be falsehoods?"—"Because," she replied, "she generally forgot one day what she had told me on another."—"Try to remember one thing, for instance?"—"I told her one morning that she ought not to put her bed-gown over her clothes when she first got up, because it was a dirty habit, but should wear a pinafore. She said that she had none here, but plenty at home. Next day I reminded her to send for one, and then she told me that she had got none, either in the hospital or at home. I used often to have to say to her, What is the use of your coming to tell me such untruths?"—"Did you not suspect Ann Ross?"—"No, for I seldom heard her talk, she was so quiet and reserved. I should never have thought of such a thing in her." When in delirium, O'Key did not appear to suspect Bentley of feigning, though she evidently had no respect for her, but

tion could be discovered, she said she would tell on the next day, the 27th of June.

On the 27th, being present to witness some further experiments, that condition of somnambulism occurred in which Elizabeth O'Key answers questions,* and it was suggested that she would probably now say what proceeding she had to recommend respecting the supposed imposition. The request was answered by an intimation of compliance, and the following illustration of one variety of the insanity which is producible in this singular person, was witnessed.

Having hesitated in somnambulism, for a short time, slowly vibrating like one without sight, doubting what direction to take, and refusing several things which were presented to her, as not being the objects that she sought, she took a mug from the table and proceeded to another apartment to refill it with water. On returning she poured water into a tumbler, and put a chip of stick, taken from the table, into each, performing other trifling manœuvres, of which no meaning could be conjectured. She then turned about in search of the girl, saying, "I want her." Being brought into the room she presented her the glass to drink. Having complied, Bentley immediately fell on the floor, as though asleep. O'Key took her hand, and the girl being "awoke," the same kind of thing with water was repeated, with several variations, trial being made by the spectators, on each occasion, to test the sleep, but without eliciting any evidence of the fiction. O'Key, being asked if it was not real, frowned a reply, and on the girl again going to sleep, poured the water, first on her head, then with an unsuccessful intention that it should enter her nose, and, finally, into her ear, when the girl aroused, said the water was "in her ear," and began to cry, but protested that she really had been asleep. O'Key shook her head, and exclaimed in a furious voice "It won't do!" Being asked what else she would attempt, she filled three wine glasses to the brim, and gave them to as many persons, intimating that she should drink at intervals from each. The girl dropped her head on tasting the first. O'Key frowned intensely, and ultimately took all three glasses in her left hand, moving it about so levelly, however, as not to spill a drop from either glass during a long interval. She made the girl drink from each, and at the last appearance of sleep, losing all patience, she thundered forth "Arise, or I'll limb you! Do you hear me? Get up! I say; up! or I'll surely limb you! You asleep, indeed!" But the girl would not move until she had been blown upon, and then, on being questioned, declared that "she was asleep, and did not hear O'Key," who raised her hand as if astonished and hopeless, a large tear rolling from one of her eyes. On being urged to try further, the girl having again affected sleep, she went on one knee, took the girl's foot in her hand, and held it for some time; she then pointed her fingers towards the girl's hand, and subsequently seized it, shortly after which she herself fell asleep,* and on awaking into delirium evinced great astonishment at the "mess" around her, the slopping of water, &c., and laughed vehemently at the girl's position on the floor, dancing around her, with many humorous remarks. Being stupified, and asked again to proceed, she made "transverse passes" before the girl, who once more dropped, when O'Key, exclaiming "Get up, you wicked thing!" bodily lifted her into a chair. The girl was now much alarmed, and said that "that was enough," that she "would stop no longer," but "go home." Yet at the very next pass she went instantly into the same condition.

"O'Key, you must be wrong. Does she still deceive?" she was asked. She frowned, and proceeded to threaten the girl, with the most terrific gestures that she could devise,

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mimicked, played all kinds of tricks with her, and treated her as a kind of idiot. But when passed from delirium into stupor, O'Key had a vivid sense of the imposition. Here were three distinct states of mental recognition and proceedings respecting one and the same person, and, moreover, to advert to the object with which this note was commenced, we would point out that although there is complete ignorance during the *natural* state of what is done in *delirium*, and somnambulism, yet that the *same sense of the artfulness* which was entertained during the sanity, was fully entertained, and yet more fully manifested, during the somnambulism. Among such circumstances as these, patient investigators may hope to find a key to the mystery that envelops the morbid phenomena under consideration.

* In this condition the eyes of Elizabeth O'Key are generally one-third open; the axes are directed inwardly, with an abstracted look, as though not used for vision. In the corresponding condition in Jane O'Key the lids are always closed, and we have witnessed a continuation of the proceedings of Elizabeth while in this state, with a covering placed over her eyes, and the fingers pressed on the lids; but she can undoubtedly use them when not thus covered, as two incidents have indicated to us. On one of these occasions she stooped, on crossing the floor, to pick up a penknife, which she wanted, that was for a moment laid there.

* On being asked, during somnambulism, at the close of the proceedings, why she held the foot, she said, "to burn it;" and why the hand, "to burn that, because there was something on the foot (the shoe), and the girl could not feel the heat."

but in vain, the girl still persisting in dropping, as if asleep, on a pass being made before her. The eyes, countenance, and positions of the somnambulist, otherwise a diminutive and insignificant-looking personage, presented at this stage the most striking characters, inviting comparisons with those of the finest tragic actress, as she paused in fierce contemplation of the crouching object before her, which she seemed to regard as though its instant annihilation was within her power. But her actions, excepting throwing the water, and once seizing the girl determinately by the hair, did not proceed beyond a *show* of violence. At any of these moments it was found that she could be instantly comatised, and again restored to the jocose delirium, and subsequently to the serious insanity.

The efforts to make the girl confess were now clearly enough quite vain, and consequently ceased. The deception had been manifested, but to quell the obstinacy was hopeless. The girl had involuntarily avowed the feigning. She had appealed for a cessation of it a second time in these words, "I won't have any more of that. Oh pray, O'Key, don't do so again. Oh, Dr. Elliotson, do wake her. I can't bear it. I won't do so any more. I'll go home. I'll not stop here another day. Pray wake her," though the moment after quiet was obtained, the old proceeding followed any attempt to "magnetise" her. On being asked, subsequently, what she regarded as a proof of the imposition, she said that the girl went to sleep when the water was not mesmerised, as well as when it was, but which libations she regarded as being mesmerised could not be ascertained.

On the day of the foregoing occurrences (June 27) experiments were again tried with "magnetised" water, but the trials, while they sometimes verified the prognostications, at others failed. The girl (E. O'Key) was sleepy and listless, and it was while drinking in one of the experiments that she fell into the state in which the above scene was enacted. While *asleep*, after one of the trials, Dr. Elliotson tried the effect of touching various parts with "magnetised" water. When a drop was placed above the clavicle, convulsions of the part ensued. When on the eyelids, they quivered. When on the brows the scalp was wrinkled up and down. When over the upper lip, and on one ala of the nose, those parts severally quivered. On the lobe of the ear no effect was produced. Placed on the foot, that member was agitated. On the back of the hand, the extensors of the fingers acted. On the flexors, they bent.

On the 5th of July a new phenomenon was presented to us, partaking yet more of the marvellous than any which had preceded it. On this occasion the girl apparently put into action one of the perceptive organs of the brain, that of sight, through the medium of the hand, during sleep, the eyes being closed and covered. She employed the back of the hand to execute the purposes of vision. But as this proceeding took place again on the 9th instant, in the presence of the Surgeon-General of Ireland Mr. Crampton, and several other gentlemen, who patiently investigated various phenomena in Elizabeth O'Key, during two hours and a half, we defer reporting the events until an account of this last-mentioned sitting can be given.

*** It is perfectly true that a Committee, composed of members belonging to the Physiological Committee of the Royal Society, are investigating the somnambulism of Elizabeth and Jane O'Key. Amongst its members are,—Professor Grant, Dr. Neil Arnott, Mr. Kiernan, Professor Wheatstone, Mr. Richard Owen, Dr. Bostock, and Dr. Roget. We have been informed that the opinion of these gentlemen has been unequivocally pronounced in favour of the reality of the coma and the somnambulism. The opinion of the Surgeon-General of Ireland, Mr. Crampton, also, after two investigations, on the 7th and 9th of July, occupying each nearly three hours, into phenomena exhibited by Elizabeth O'Key, has been pronounced in favour of the perfect honesty of the somnambulist, and the reality of the extraordinary events which occurred on those occasions.

DISEASES OF THE BRAIN.

At a recent meeting of medical practitioners in the North of England, Dr. Jones, of Chester, is stated in a report of the proceedings in the local journal, to have read "an account of two cases, one, of atrophy of the brain, which was diminished in size to a considerable extent, the vacant space within the cranium being filled up by serum, and the brain itself hardened to the consistence of cheese; but notwithstanding such extensive disorganisation, the intellectual faculties and motive powers were but slightly affected.

"The other case was one in which the patient laid in bed for three years, in a state of mere organic existence,—the intellectual faculties, the external senses, and the powers of motion, being wholly destroyed, except some remains of sensibility in the lips. In this state the patient continued, being regularly fed, and all the organic functions being naturally performed. At the expiration of this time he was observed to become thinner, and in a short time was

suddenly restored to the possession of his entire powers, and made some exclamation much to the consternation of his attendants. He had not the slightest recollection of anything which had occurred during the whole of that period, and it would appear that all internal perceptions had been entirely suspended. This unexpected restoration was but the precursor of dissolution shortly afterwards. After the most careful examination of the brain, no perceptible disorganisation could be discovered. The cause of the disease is supposed by Dr. Jones to have been an effusion on the brain, which existed during the torpor, and that his becoming thinner indicated an increased activity of the absorbents, by which the effused fluid was removed, and the functions of the brain restored."

THE LANCET.

London, Saturday, July 14th, 1838.

At the present juncture, when the question of *Medical Reform* is on the eve of assuming a practical shape, it is important to entertain distinct views of the leading principles of medical policy; and it would be highly disastrous if the notion were once entertained that uniformity in the curricula of the Colleges was one of those principles, or was at all calculated to regenerate the medical profession. The absurdity of this notion is plain. The three Royal Colleges of Surgeons have agreed on a curriculum: they have but one curriculum; they now demand the same number of certificates; but can any candid man say, after a calm consideration of that triune curriculum, that either students, practitioners, or the public, are likely to be benefitted by the uniformity of a flagrant evil? As well may the Royal Colleges decree that the medical practitioners of England shall all be born of the same magnitude; that their brains shall all be of the same calibre, or their purses of the same length, as insist that they shall all go through the same course of instruction. For it is evident, that to attain anything like the same average of acquirements, a very different training, in degree and duration, must be gone through by different individuals in different circumstances. And the friends, teachers, and students themselves, are better judges of their own means and wants, and of all the peculiarities of their position, than the delegates of the Colleges.

It is undoubtedly advantageous to study the various departments of science in a certain natural order, so that, like the body in a gymnasium, the mind may be gradually prepared in going along, and by the knowledge first acquired, for its future exercises. The study of mathematics, natural philosophy, chemistry, and natural history, should precede that of anatomy; anatomy, should precede physiology; physiology, should precede pathology. The advantages of such a natural order of study may be rendered so obvious, that every student would adopt it without being driven through a curriculum; and would only deviate from the natural order when peculiarities in his circumstances rendered such a deviation really advantageous. But is a man to be refused a licence to practise, though possessing every qualification, because he has, by some accident, pursued his studies in an order exactly the reverse of that which a College thinks the best? Because a good classical scholar has studied languages by the old bad methods, and wasted years on the grammar and dictionary, instead of acquiring words rapidly by practice, and gathering rules from examples, is he to be denied the privileges—whatever they may be—attaching to his laborious acquirements? Is the victor, in games of the intellect, to be denied the palm because his training has been short or irregular, and because he has won by power and natural skill, despite of adverse circumstances? Or, because he has accomplished by a short training what another could scarcely perform by a protracted course of discipline, is he to be refused the license? We have never held that medical science can be acquired, ordinarily, by any system of educational short-hand; and are ready to admit, that after the elements of general science have been attained, five or seven years would probably elapse before the conscientious

student could entrust himself with the treatment of cases of all kinds, such as they occur in practice. But it is well known that some students will obtain greater practical ability in five years than others could obtain in ten years; and we consider the rapid acquirement of knowledge to be no evil, but an advantage to be earnestly sought after. So that fixing the *time* is no less absurd than establishing the *order of study*, by inflexible regulation.

The state has no right to interfere with the freedom of instruction, and is indubitably bound to prevent irresponsible corporations from interfering, or conferring injurious monopolies; the state ought only to insist on the institution of an invariable test of medical qualification, and certificates are of no value whatever in this respect, compared with other direct tests, to which we shall here direct a moment's attention.

Let us suppose that Examiners are appointed, intimately versed in the various departments of medical science, one to each section, and that they have power to examine the student in theory and practice by the best tests that they can devise. Beginning with *natural philosophy* and *chemistry*, if the candidate answered questions in writing, and stated the laws of gravitation and electricity, and heat and chemical combination, intelligibly, and showed by an oral examination that he had accurate conceptions of the general principles of those sciences,—if then the elementary bodies and some of their principal compounds were placed before him, and he were desired to point out the different substances, and their characteristic properties, or to perform and explain three or four of the more important processes, we ask could not THOMSON, FARADAY, AIRY, ARNOTT, GRAHAM, or any competent natural philosopher or chemist, pronounce, on such evidence, whether the candidate was or was not practically acquainted with those important sciences?

Again, could GRANT, CHARLES BELL, or BLUNDELL, have any difficulty in devising such questions in *anatomy* and *physiology* as would give the candidate a fair opportunity of evincing his acquirements in anatomy and physiology, when the written and oral examinations were taken in conjunction with dissections and demonstrations? The candidate's acquirements in botany, materia medica, and medical jurisprudence, may be tested practically with equal facility. And the history and general doctrines of pathology fall under the same category; the student might produce evidence of his knowledge on these subjects in words, written or spoken, and a skilful judge would immediately perceive the accuracy of that knowledge, or its non-accordance with generally received opinions. But we come now to the practice of medicine and surgery, where some halt, and say that certificates of hospital attendance are indispensable, as the candidate's practical ability cannot otherwise be ascertained. And why can it not be ascertained? We should like to know what sort of evidence the present certificates of hospital attendance present of practical knowledge. Is this evidence so direct, so unequivocal, so satisfactory, as to render other evidence unnecessary? Are not hospital certificates, on the contrary, entirely illusory, neither obtaining nor deserving the least confidence when viewed as tests by persons having the slightest knowledge of the medical schools?

If a candidate were taken to ten surgical patients of various kinds; requested to write down the cases; to prescribe the necessary medicines; to apply the dressings and bandages; to adjust the fractures; and afterwards to write out general observations upon the diagnosis, probable course, and treatment, would not this be a better test of his skill in surgery than an hospital certificate? On such evidence could not any competent surgeon decide whether the candidate were entitled to a license? M. ROSTAN adopted an excellent system of clinical instruction at *La Salpetrière* some years ago, which is described, if we are not mistaken, in his work upon clinical medicine. The student went to the bedside of

the patient, and investigated the nature of the disease according to a determined method; after having obtained all the data considered necessary, he proceeded to arrange the facts, to announce the diagnosis, the prognosis, and the treatment, supporting the conclusions by all the reasons that occurred to his mind. The opinions emitted by the student were then confirmed or rejected by the Professor, who, in displaying any error, took care to direct especial attention to its sources. We have seen these clinical examinations conducted repeatedly, and never felt any difficulty in deciding, after three or four trials, upon the student's practical qualifications. If wards were set apart in the hospitals and workhouses, and public clinical examinators were appointed, with even half of ROSTAN's talent, we do not imagine that the student who was well versed in the art of medicine, would escape undiscovered.

We have here, then, the elements of an uniform direct test of medical acquirement. Certificates would be entirely superseded, except certificates of regular habits, and irreproachable conduct. The student would be called upon to display his knowledge, not his schoolmaster's bill; his talents, not the evidence of opportunities which he had had of improving them, and which he might or might not have abused.

It has been affirmed that they have never been dispensed with, and that experience has never sanctioned any other system. This allegation comes too late. The professors of almost all the medical schools have founded prizes, and considering themselves competent to decide, not only on the general merits of candidates, but on different degrees of merit, give medals and certificates to the first, second, and third, down to the twentieth best competitor. Now, if the arbiters can decide, justly, accurately, and satisfactorily, to such a degree of nicety on different *degrees* of merit, from mere written examinations, it is very plain that their experience is in favour of the fact, that examinators can determine the general qualifications of candidates, without reference to the time or place of study, or to certificates of any description.

Practical and Experimental Chemistry, adapted to Arts and Manufactures. By E. MITSCHERLICH, Professor of Chemistry in the University of Berlin. Translated from the first portion of his "Compendium," by STEPHEN LOVE HAMMICK, M.D.

THE admirable work of the Berlin professor has been familiar for several years to every chemist in this country, if not in the original German, at least in the form of a French translation published at Brussels, in 1835. When we saw the above work announced we expected that the chemists of this country were to be presented with something new: at the lowest estimate with an accurate translation, probably executed under the inspection of the distinguished author; and this presumption might have been increased by the high-sounding titles which the translator has attached to his name,—*Fellow of the Royal College of Physicians, and One of the Radcliffe Travelling Fellows of the University of Oxford.* Surely we might have concluded that one who was considered worthy by the University of Oxford to receive £300 per annum for the space of ten years, could not possibly put his pen to paper without conferring some edification on her Majesty's lieges. But we have lived a sufficient space of time in this sublunary sphere to be enabled to concur with the poet in his affirmation that "all that glitters is not gold." We question if any man in the present day, however moderate his education may be, would mistake the "glistering" of Labradorite for a gold ore, as Sir Martin Frobisher did, in the time of Queen Elizabeth; and yet this navigator did commit such a mistake, and persuaded others into a belief in the same fallacy, so that he was enabled to fit out two ships, with which he sailed to Labrador, and brought home two cargoes of the said useless "glistering stones." Reader, beware of glistering stones,—beware of trusting to palaces of ice, which look brilliant when the rays of the sun shine in full vigour upon them, but which gradually melt away and disappear never more to rise; be not deceived by the apparent substantiality of the

"Snow-fall on the river,"

which

"Appears awhile, then melts for ever."

When an individual comes before the public

in a literary capacity, without pretension, he should be moderately dealt by, but when a man boasts of his high acquirements, which *a priori* one might be induced to believe were substantial in the present instance, he must be subjected to a more severe scrutiny, because it is best not to rest satisfied with what a man says of himself, but to judge of him by what he does, since philanthropy is so powerful in some persons that their charity begins at home, and is exhausted there from its very strength.

There are three requisites for an English translator, without which no one should attempt the office:—1st. He should understand his own language. 2nd. He should understand the language from which the translation is made; and, 3rd, he should be acquainted with the subject to be translated. In every one of these particulars does our travelling bachelor prove himself deficient.

1st and 2nd. *Ignorance of English and German.*—It is impossible that anything could be more inelegant or ungrammatical than the whole translation from beginning to end; an Englishman could not fail to be disgusted with his own language, if the following were specimens of it, which we take *ad aperturam libri.*

"The wood consists of carbon, hydrogen, and oxygen, the two last ingredients exactly in the same proportions *as found in water.*" —P. 253.

Again,—

"By decomposing water (in a mixture previously described) chlorine and *an unknown degree of oxidation* of iodine must be held in solution."—P. 73.

"In the gas which remains, burning bodies do not ignite; *from whence* we may conclude that atmospheric air contains oxygen."—P. 5.

"That kind of charcoal we procure free from gaseous ingredients, *from coals*, is termed coke."—P. 85.

"It *is as far as its combinations*, of essential importance in a scientific point of view, as it explains the method," &c.—P. 93.

The above reminds us of the nursery rhyme of "The House that Jack built."

"If sulphovinic acid plays a part in the preparation of ether an acid is therefore necessary as *a contact substance.*"—P. 131.

Where is the grammar in the following? It can only be at Oxford:—

"These two properties are most conspicuous in charcoal, as being a most porous body, though they may be found in other substances; they offer an easy method of presenting a clear idea of the proportions," &c. —P. 91.

The following is ungrammatical as well as wrong: the process should obviously be reversed:—

"By allowing fluid chloride of phosphorus which is kept cool to pass over dry ammoniacal gas, *it is* absorbed," &c.—P. 78.

Such are a few specimens taken at random, but we can assure the reader that there are few pages which do not contain errors that a mere tyro at school would be flogged for. The following is a precious piece of intelligibility:—

"Oxygen is of all bodies the most interesting as an ingredient of atmospheric air, as a substance which supports combustion, and as a principle of the greater part of the chemical combinations we are engaged on." —P. 5.

The translator obviously does not understand the original. The literal translation of the passage is,—

"Oxygen is the most interesting of all bodies to us; for it enters into the composition of atmospheric air; it is the substance which produces combustion; it is one of the principal constituents of the greater portion of the compounds with which we are about to be occupied."

Again,—

"The azote gas escapes through the waste-pipe."—P. 76.

The true meaning being—"The azotic gas then escapes by a discharging tube."

But the whole translation is so mangled and altered that in some pages it is sometimes impossible to recognise the original. Entire sentences are left out, and the original meaning obscured by a miserable abstract of what cannot in an elementary treatise be abridged.

3rd. *Ignorance of Chemistry exhibited by the Translator.*—The following is the first specimen, upon which we have fallen by accident.

"By boiling a mixture of hydrochloric acid and nitric acid with an excess of iodine, a part of the oxygen of the nitric acid combines with the hydrogen of the hydrochloric acid, the chlorine of which combines *with the hydrogen of the iodine*, forming a brown solution in which chloride of iodine is suspended. By adding to this solution ammonia so that chlorine combines with the hydrogen of the ammonia and iodine with azote, a brown body falls to the bottom, which has the external appearance of a thick black powder," &c.

Here we are taught that hydrogen is one

of the constituents of iodine. The literal translation is,—

"The brown compound may also be obtained by digesting an excess of iodine in a mixture of hydrochloric and nitric acids; one part of the oxygen of the nitric acid combines with the hydrogen of the hydrochloric acid, the chlorine of which unites with the iodine, and furnishes a brown solution. If we add ammonia to this solution the chlorine unites with the hydrogen, and the iodine with the azote of this body. The iodide of azote precipitates in the form of a brown powder which when seen in the mass appears black."

We might produce innumerable passages of a similar description, if our object were not rather to warn the public against imposition than to notice the wretched trash of this so-called translation.

But we have yet to notice one of the most stupid blunders which pervades the whole volume. The translator tells us that Mitcherslich employs the thermometer of Reaumur. Now, we find that the translator does not adhere to this notice; for in the translation the degrees are sometimes calculated upon the supposition that the degrees in the original are those of Reaumur and sometimes those of Celsus. Thus, under sulphur, we have,—"If sulphur be heated above 280°, we find a phenomenon only known in the case of sulphur. Somewhat above 280° it is perfectly fluid, clear, &c." The number given by Mitscherlich is 111°, and is on the centigrade scale; its equivalent in Fahrenheit's is 231° 8. The boiling point of sulphur is usually placed about 750° F.; Mitscherlich makes it 420° C. or 788° F.; but our bachelor raises it to 970° F. Again, selenium, according to Mitscherlich, is fluid at 100° F. The translator here adopts the true number 112° F.; but why he does not calculate as if from Reaumur's degrees, we are not told. The consequence is, that not one of the temperatures which occur in almost every page, and which are essential to most of the processes, and as respects the properties of substances, is to be depended on. If the error was a constant one, the reader might occupy himself for a day or two in recalculating the degrees; but as the original numbers are not given, this is impossible. This is sufficient to prove to us that the translator is most grossly ignorant of the whole subject of chemical science; because the temperatures at which sulphur exhibits particular phenomena are of great interest, and are essential data in order to be able to appreciate the doctrine of isomorphism, discovered by Mitscherlich, one of the most important doctrines in the science.

The translator has enriched his precious work (for we cannot admit that it is a translation of Mitscherlich) with three notes. One is as follows:—

"There (these?) are two mines situated in the neighbourhood of Berlin, from whence large quantities of coals are annually consumed in that city."

This, we suppose, is a travelling bachelor's ellipsis. The other two notes contain each two Greek words, as part of their composition. The argument of one of them we must notice, as affording an example of the travelling bachelor's extensive powers of reasoning:—

"Its (cyanogen) present name is derived from κυανος, blue, and γενναω, to generate, as (because?) it is an essential ingredient of Prussian blue."

This is fine, although by no means equal to the reasoning of Shakspeare's clown. But we are tired of exposing such folly, and we must draw our notice to a conclusion. We have presented our readers with a few specimens,—1st, of the knowledge of English and German grammar and language possessed by this Fellow of Pall-mall Hall, and precious Oxonian; 2ndly, of his knowledge of chemistry; 3rd, of his powers of reasoning; 4th, of his acquaintance with Greek; all of which circumstances, when combined, tend to render him exceedingly well qualified to be artificially raised from the lowest abyss of ignorance to the top of the ladder of medical quackery. We do most thoroughly believe, and state it for the benefit of our Reading friends in particular, who have petitioned against empiricism, that the true seat of quackery in this country is the College of Physicians. It is a medium by which an ignoramus in science and who possesses a smattering of Greek and Latin, may be palmed upon the public as a physician, through the instrumentality of influential friends. It is a system which must be speedily put a stop to, for we should as soon think of permitting the Courtenays and Thoms of Kent to wander uncontrolled among the ignorant country people, as we would tolerate the exercise of medical practice by many of the members

of the Pall-mall College among the community.

We may, perhaps, be accused of severity. But where, we ask, is the severity in exposing imposition and ignorance? We, as guardians of the interests of the medical profession, would be culpable if we did not discover the gilded gingerbread, the "glistering stones," when we suspected they might be mistaken for genuine metal.

ACADEMY OF SCIENCES.

ON A NEW APPARATUS CAPABLE OF ACTING AS AN EXHAUSTING RECEIVER ON THE LOWER HALF OF THE BODY, WITH CASES ILLUSTRATIVE OF ITS EFFICACY.

By M. JUNOD.

THE effects of the exhaustion of air over a small portion of the body have been known from the earliest ages; but it was only very recently that experiments of this kind were made on a large scale, or applied as a means of fulfilling therapeutical indications.

We have already drawn the attention of our readers to the ingenious contrivances of M. Junod, for producing a vacuum over the extremities, and are able to present them below with a sketch of the original apparatus. M. Junod, however, has extended that apparatus to the trunk of the human body, and by an ingenious though simple contrivance, is now enabled to produce a vacuum over the whole of one moiety of the frame at the same time.

The effects of thus withdrawing the accustomed atmospheric pressure from a large surface of the body, or of increasing that pressure, are of a striking and novel kind. The most curious result which has been obtained, perhaps, is the facility of producing or dissipating syncope at the will of the operator. It is not easy to determine the precise benefit which may be obtained by producing artificially the state of syncope; but if the latter be really of the great importance which is attributed to it in the cure of inflammatory affections, the discovery of M. Junod cannot fail to be of the highest importance.

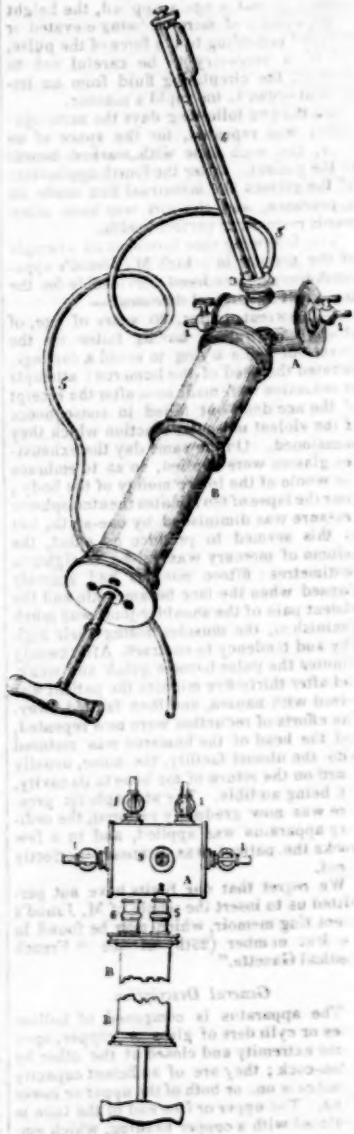
The engraving representing a portion of the apparatus will give a sufficient idea of the modification intended to be applied to one moiety of the body, we shall therefore omit a particular description of the latter, and turn to the cases which M. Junod has related to exemplify the good effects of his apparatus:—

In one case, that of an officer, 38 years of age, affected with apoplexy and hemiplegia, the inferior extremities were placed in the pneumatic cylinders on the 11th of December; the atmospheric pressure diminished on one limb by a twelfth, on the other by a seventh; the operation was repeated during the eight following days with the best effects; the headach was quickly dissipated; the rigidity of the lower limb disappeared; the deglutition and voice became free, and in the course of a few weeks the patient completely recovered his health.

In another case related by M. Junod, the catamenia appeared after the fourth application of the machine, although every remedial means, usually employed in such cases, had been tried, both in private and hospital practice. The following is a brief history of this interesting observation:—

Desirée Gary, sempstress, 20 years of age, was received into the Hotel Dieu, on the 3rd of December, 1834. The patient, a girl of very nervous temperament, having suddenly lost her mother, was seized with violent palpitation of the heart, accompanied with lancinating pain; the catamenia now became suppressed, and she was compelled to confine herself to bed, in consequence of frequent attacks of vertigo; a medical man had ordered her to be bled, and applied leeches, but without any benefit. On examining the patient's chest, an incipient hypertrophy of the heart was discovered; the pulsations of the organ extended over the whole of the pectoral region, and were accompanied with a slight *bruit de soufflet*. The pulse small and irregular; headach constant; the senses of hearing and seeing somewhat obtuse, especially on the right side; the patient suffered a great deal from pain in the hypogastric and lumbar regions. Various remedies were tried without success in the hospital, and M. Magendie ordered the pneumatic apparatus to be employed. On the 8th of January it was applied as nearly as possible to the region of the uterus, and the atmospheric pressure diminished by one-ninth, after which the column of mercury was gradually raised to twelve decimetres. After the lapse of fifteen minutes, the pulsations of the heart became gradually less strong; the face, which was before of a livid red colour, became excessively pale, and the patient showed some tendency to fainting. The pressure was now reduced to one-seventh, and in twenty-five minutes the headach had completely disappeared. On again reducing the atmospheric pressure to one-eighth, the upper part of the body was seized with a slight shivering, which probably depended on the abstraction of blood, but no other remarkable phenomenon presented itself.

On the 9th, for the first time since her illness, the patient was able to get up without experiencing vertigo; the pulsations of the heart were less violent; the headach and



dizziness have disappeared; slight blue tint of the lips and face.

10. Apparatus again applied, the height of the column of mercury being elevated or lowered according to the force of the pulse, for it is necessary to be careful not to abstract the circulating fluid from an important organ in too rapid a manner.

On the two following days the same operation was repeated, for the space of an hour, and each time with marked benefit to the patient. After the fourth application of the glasses the menstrual flux made its appearance, and the girl was soon afterwards restored to perfect health.

The following case furnishes an example of the manner in which M. Junod's apparatus may be rendered serviceable for the treatment of surgical diseases:—

— Lawrent, hatter, 30 years of age, of strong constitution, having fallen on the pavement while trying to avoid a carriage, luxated the head of the humerus; attempts at reduction were made soon after the receipt of the accident, but failed in consequence of the violent muscular reaction which they occasioned. On the same day the exhausting glasses were applied, so as to embrace the whole of the lower moiety of the body; after the lapse of ten minutes the atmospheric pressure was diminished by one-sixth, but as this seemed to produce no effect, the column of mercury was raised to eighteen centimetres; fifteen minutes had scarcely elapsed when the face became pale and the violent pain of the shoulder-joint was much diminished, the muscles losing their rigidity and tendency to contract. After twenty minutes the pulse become quick and weak, and after thirty-five minutes the patient was seized with nausea, and then fainted away. The efforts of reduction were now repeated, and the head of the humerus was restored with the utmost facility, the noise, usually heard on the return of the bone to its cavity, not being audible. The atmospheric pressure was now gradually restored, the ordinary apparatus was applied, and in a few weeks the patient was dismissed perfectly cured.

We regret that our limits have not permitted us to insert the whole of M. Junod's interesting memoir, which may be found in the last number (25th) of the "French Medical Gazette."

General Description.

The apparatus is composed of hollow tubes or cylinders of glass or copper, open at one extremity and closed at the other by a stop-cock; they are of sufficient capacity to embrace one or both of the upper or lower limbs. The upper or free end of the tube is furnished with a copper heading, which embraces the limb closely; this heading may be changed, so as to accommodate itself to the volume of the limb. A flexible tube extends from the stop-cock of the cylinder to a second stop-cock connected with a transverse tube, into which latter the air-pump or syringe is fixed.

Fig. 1.

1. Tube containing the limb.
2. Copper heading to embrace the limb.
3. Circle caused by the tumefaction of the soft parts round the cap.
4. The stop-cock.
5. Flexible tube. This tube should have been continuous with tube (Fig. 2, No. 3) of the syringe, but is separated from it for the convenience of engraving.

Figs. 2 *and* 3.

The Air-pump and its Appendages.

The same figures answer for both plates.

A. *The Receiver.*—This is a transverse cylinder of copper, which forms an intermedium between the cavities of the syringe and the larger tubes. Four stop-cocks are attached to it, and communicate with four flexible tubes (1, 1, 1, 1,) which pass to the various cylinders.

2. The orifice of communication with the pump.

3. Orifice for the reception of the barometer.

4. A graduated tube indicating by means of mercury the degree of atmospheric pressure.

B. *The Pump.*—This instrument is at once capable of inhaling and expelling air, by means of two valves which bear some resemblance to the keys of a wind instrument.

In tube (5) the valve opens inwardly, and acts as an inhaler. In tube (6) the valve opens externally, and acts in a contrary manner. As each of these tubes is screwed into the orifice (2) of the transverse reservoir, the pump condenses or rarefies the air contained in it.

VACCINATION.

To the Editor of THE LANCET.

SIR:—In forwarding to you the case of Julia Gladwell, which you were so obliging as to insert in your Number of the 9th inst., I did it with a view to make known to my professional brethren a case which appeared to me to be of no common occurrence, and those amongst them to whom I have the pleasure of being known (with the exception of the individual who has thought fit to comment on my communication in your Number of the 23rd inst.) will acquit me of being guilty of any misstatement in the case, or of being so inexperienced in my profession (in which I have somewhat extensively practised for many years) as to have mistaken a spurious for a genuine vaccine vesicle.

Mr. Thomas Abraham, the individual to whom I allude, has, if I mistake not, but very recently passed his examination, and I would strongly recommend him, until information acquired by practice shall have better qualified him to judge of new and anomalous cases, to refrain both from writing critical and invidious remarks on well authenticated statements transmitted to you by practical men, and from offering gratuitous opinions, which, emanating from such a *juvenile* source, will be entirely disregarded. Deeming it unnecessary to recapitulate my former statement of the case, and intending to have no further communication with Mr. Thomas Abraham, I will conclude, Sir, by expressing my thanks for your early and kind insertion of this letter in your widely circulated and excellent Journal. I am, Sir, with great respect, your most obedient servant,

HENRY WILKIN, M.R.C.S.L.

Walton, near Ipswich,
June 30, 1838.

THE KENT FANATICS.

To the Editor of THE LANCET.

SIR:—Poor Dr. Uwins, who is dead and gone, once asserted, on oath, in a court of justice, that in his opinion every living mortal was more or less mad. Your correspondent, Mr. Hunt's, hypothesis will be considered by all sober-minded people as scarcely less monstrous. Admit it in one species of crime, and would it not be urged in justification of every other? "Is there not in all crime (I quote the words of an intelligent weekly journalist) an irrationality, the highest degree of which is so near of kin to insanity as easily to be taken for it? Upon analysis of every act of crime a considerable degree of delusion will be found. Coleridge wisely defines a knave 'a fool with a circumbendibus,' and capital criminality is not a wiser thing than simple knavery." The delusions arising out of evil temptations are often mistaken for the delusions produced by disease; and the murderer of Mr. and Mrs. Bonner is only one of a large number of criminals who have accounted for their crime on the ground of sudden possession by the Devil.

Those who have had most experience in the treatment of insanity will bear me out in the assertion that it is in no instance contagious; but the *eloquence* of a madman may lead astray weak minds, and this accounts for the fact, that whether in religion, morals, or politics, a talented man is sure of his "tail," however monstrous may be his tenets. But are these simpletons to be, therefore, held *irresponsible*, if their leader should incite them to acts of lawless outrage? No, Sir, the safety of society demands that means should be taken to prevent a recurrence of crime.

Every medical man must be familiar with the cases of what your correspondent calls "contagious hysteria," and he also knows full well that this is a disorder which admits of *calculation of consequences*, and that the readiest mode of arresting its progress is to act upon the *intimidating* plan of the sagacious Boerhaave. If, on trial, the parties implicated in the disgraceful Kentish affair should really be pronounced non compotes mentis, let them be taken care of as lunatics, but do not, by an act of absolution, hold out a premium for a fresh outbreak of this sanguinary "intermittent."

I am willing to give Mr. Hunt every credit for his philanthropy, as well as the zealous physician who has so kindly lent his name to his friend's paper, but I sincerely hope this letter may accompany it in circulation, and prevent either counsel, judge, or jury from being biassed by its advocacy of such a one-sided sort of humanity. I am, Sir, your obedient servant,

AN ORIGINAL SUBSCRIBER TO THE LANCET.

London, June 21, 1838.

UPAS TREE AND VALLEY.

To the Editor of THE LANCET.

SIR:—Your correspondent, Mr. Cross, in a recent number of your Journal, treats with very little decorum the Javanese travellers; and poor Foersch, in particular, receives, certainly, more than his due share of abuse. Notwithstanding the incredulity of Mr. Cross, I can assure him, upon the best authority, that the Upas valley does exist, and that in certain parts of it, I was informed by a friend who visited it about six years ago, skeletons of human beings, and of inferior animals, are frequently to be observed. My friend also stated, that in the lower part of the valley, which is exceedingly beautiful, there is a stream or pool of water, through which gas bubbles up in large quantities, and that the air on its surface is of the most stifling nature. A dog when introduced into this locality is speedily asphyxiated. My friend, who was under the charge of one of the Princes of the island, was anxious to breathe this atmosphere, but his conductor would not permit the experiment. The whole of the bottom of the valley is infected with a similar exhalation, most probably attributable to the action of heat upon limestone rocks (for there are above twenty volcanic mountains in Java, most of them in active operation). The fact, therefore, of the existence of the Upas valley, as related by Foersch, cannot be disputed; but the *cause* of the desolation which occurs in that locality is a

different matter. Foersch attributes it to the Upas tree, which I believe does grow there; whereas it is owing to the exhalation of carbonic acid gas, as at the Grotto di Cane at Naples. Your obedient servant,

T.

London, June 30, 1838.

WOUND OF THE BRAIN.

To the Editor of THE LANCET.

SIR:—If you think the following case (as exemplifying the great tenacity of life after severe injuries of the brain) worthy a place in your useful Journal, I will feel obliged by your inserting it. I am, Sir, your obedient servant,

J. M. CUNNINGHAM, M.D.

Hailsham, Sussex, June 20, 1838.

On the 2nd of the last month I was requested to visit Stephen Daw, ætat. 14 years, who was reported to have accidentally shot himself. I found him lying on the ground, bleeding profusely from a wound directly over, and within three lines of the left superciliary ridge, and part of the cerebrum, to the extent of a tablespoonful, lying on the clothes under his head. The wound itself was of a circular form, evidently made by something that had penetrated to the brain, carrying before it a circular piece of the frontal bone, without fracturing it beyond its edge or injuring the surrounding integuments. I was told he had been *once* very sick, when he raised himself to the sitting posture without difficulty; but at the time I saw him he was in a state of collapse from loss of blood. It appears that when firing off a pistol loaded with ball it burst, the ball passing through a gate at which he was firing, and the pistol itself being dashed into pieces; the breech I felt satisfied had entered and remained in the brain, although on probing as cautiously as possible I could feel no foreign body within reach; I had him, therefore, merely kept perfectly still and saturnine applications placed on the forehead.

3. The bleeding, though occasionally recurring, is of no great extent; has had a convulsion during the night; lies perfectly quiet, and says he is in *no pain*, but sleepy. Continued the applications and gave an aperient.

4. The bowels have been moved freely; pulse not so compressible, but variable; skin hot, and cheeks flushed, otherwise much the same; the wound filled with a coagulum; puts his tongue out when asked to do so, but answers no questions. Applied cold poultices made of lead-wash and bread to the wound, and gave him a fever mixture.

5. Feverish symptoms relieved; puts out his tongue as before, and made an observation respecting his food, saying they had put wine in his arrowroot, which was found to be correct; otherwise the same; continued the poultices and medicine. I may now say, that the wound in a few days threw off the coagulum, and at first discharged a great quantity of pus, which gradually lessened and appeared to heal as fast as a wound possibly could do. His strength seemed gradually to return; the pulse assumed a most healthy beat; he answered questions put to him and could see all around him very well. When asked where he felt pain he put his hand *to the back of his head*, but we never could get him to raise his head up. This state continued until the 24th, when he appeared rather suddenly to be sinking; on the next day he was perfectly comatose; and on the 26th he died, *just twenty-four days after the accident.*

Autopsy, four days after Death.

On removing the upper part of the cranium the wound of the brain was found to have *perfectly healed*; the dura mater adhered all round the aperture in the skull, which had diminished to half its original size, so that at first I began to think my diagnosis had been incorrect, but when I reached the ventricles I perceived the trace of a foreign body; a little further there was a good deal of disorganisation from the formation of pus, and resting against the occipital bone and over the tentorium, lay the breech of the pistol, an iron screw, weighing *nine drachms*. Thus it will be seen that this poor boy lived *twenty-four days* after being shot directly through the substance of the brain, and Nature made so great an effort to heal the injury that I am led to believe, had the foreign body sufficient momentum to have passed through the occipital bone, that he would have recovered from it.

AFFECTION OF THE ELBOW-JOINT.

To the Editor of THE LANCET.

SIR:—May I beg the favour of you to insert the following case in your valuable periodical. I have the honour to be, Sir, yours, &c.,

THOMAS H. SILVESTER, M.D.,
Member of the Coll. of Phys., London.

Clapham Common, June 26, 1838.

Mr. C——, æt. 56, fell into a bad state of health in the year 1838, complaining chiefly of pain in the back, and wandering rheumatic pains about the shoulders. He became languid and sallow, and greatly dispirited. He went through the usual course of treatment for rheumatic affections with apparent benefit, but after some time began to suffer from a fixed pain in the elbow-joint; it was worse at night, but at length it became constant and almost intolerable. Topical bleed-

ing and blistering afforded some relief. Mercury carried to ptyalism produced very transient benefit, with great injury to the general health. Sarsaparilla in large doses entirely failed. When I saw him towards the end of the year 1834, the pain had somewhat abated, still it was constant and severe, the joint was swollen and had a mis-shapen appearance; it was very tender to the touch, and could not be extended. A physician in town had prescribed an ointment containing aconitine, and its effect was certainly very remarkable; I watched its application for a considerable period, and it never failed to remove all painful sensation in the course of a few minutes; it seemed to paralyse the nerves of sensation of the part; it may have lessened the violence of the inflammation in some degree, but its influence was so transitory that the joint had generally returned to its previous state of suffering in forty-eight hours. I therefore recommended the patient to discontinue the ointment of aconitine, and prescribed iodine. The form used was the hydriodate of potash in a draught three times a day in the dose of eight grains. Its salutary powers were discoverable almost instantly. The pain, together with the inflammation disappeared, returning only in a slight degree on change of weather; but the joint remained mis-shapen to the day of his death, which occurred about two years after this period, when I had an opportunity of examining its condition. There was much deposition of coagulable lymph around the ligaments and tendons; the bone was sound, but its cartilage appeared worm-eaten in several places; many shallow depressions were observed, coated with a reddish vascular membrane. A cyst containing melanotic deposit was found attached to the upper part of the left kidney.

HYDROPHOBIA.—A correspondent, a physician, wishes us to insert the following statement:—"He was called to see a stout young man on the second day of an attack of hydrophobia, who had been bitten by his own dog about four weeks previous to the attack of hydrophobia. He died the following day. Two other persons had been bitten at the same time by the same dog; they were much alarmed at witnessing the above mentioned case, and consulted the writer, who adopted the following plan:—The bitten, or rather the parts ulcerated from the bites, were kept open by means of *ung. sabinæ*. The system was kept free by means of aperients. Pilulæ hydrargyri of five grains, were given to the extent of from ten to fifteen grains per diem, in order that those glands which in the canine species show the peculiarity of their system, might be for some time affected. This plan was continued, in both cases, for four or five weeks, and about the end of that time the ulcers healed very kindly, though the *ung. sabinæ* had been used the whole time. These two individuals have continued to enjoy good health. Not long after this, the writer was called to visit a young woman, eighteen years of age, who had recently been bitten by a mad dog. While she was feeding two young pigs, the dog, in passing, bit them both, and they both became mad. The writer calmed her fears—requested a surgeon to incise the bitten part and bleed her freely at the arm. Aperients were given for two days, and the same plan was followed as in the above detailed cases. The young female has been in good health ever since."

M. FRICKE, of Hamburg, recommends frost-bites to be rubbed over with the nitrate of silver, and says that this is a very efficacious mode of treatment.

TO CORRESPONDENTS.

The publication of *Mr. Sharpe's* letter would unavoidably lead to a controversy from which but little benefit could result.

A full account of the inquest held on the body of Elizabeth Davison, at Yarmouth, shall appear in our next number.

Communications have been received from *Messrs. Harington, J. Houlton*, and *John Jackson*.

A letter from *Mr. J. Blake*, a student at University College, containing some remarks on experiments performed on the two girls O'Key, to which reference was made in the last LANCET, was returned to him on Tuesday morning, from an apprehension that we could not comply with his wish to insert it in the *present number* of THE LANCET. Subsequently it was intimated to him, that we would incur some inconvenience to find a place for it this week. We have not received it a second time; but a careful perusal of the document, a MS. of 17 pages, has enabled us to aver that its contents are perfectly unimportant as regards every matter in dispute between the magnetisers and their opponents. With regard to ourselves, we feel bound to state that we have not marshalled our forces with either party, having been quite content to perform the humble duty of chroniclers of events which, to say the least of them, are passing strange, and admit not of being easily credited or understood.

ERRATUM.—In the report on Animal Magnetism, last week, page 516, last line, col. 2, *for* 21st inst. *read* 20th inst. The remarks in that article do not exclusively refer to experiments performed at one sitting.